NextG 007GTi PRO USB-Yagi TurboTenna

Jan 18

2015

This manual walks though the steps of setting up the USB-Yagi Plug & Play WiFi antenna from quick start followed by detailed explanation of what each parameter does. It talks about the STATION mode for accessing a remote hotspot, and using the USB-Yagi as a local ACCESS POINT for sharing the Internet with other WiFi computer clients

Instruction Manual

Version 0.215.7

Copyright© by danets Datacom Network Ltd. all rights reserved.

No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language or computer language, in any form or by any means, electronic, mechanical, magnetic, optical, chemical, manual or otherwise, without the prior written permission of this Company .This company makes no representations or warranties, either expressed or implied, with respect to the contents hereof and specifically disclaims any warranties, merchantability or fitness for any particular purpose. Any software described in this manual is sold or licensed "as is". Should the programs prove defective following their purchase, the buyer (and not this company, its distributor, or its dealer) assumes the entire cost of all necessary servicing, repair, and any incidental or consequential damages resulting from any defect in the software. Further, this company reserves the right to revise this publication and to make changes from time to time in the contents hereof without obligation to notify any person of such revision or changes. The software and specifications are subject to change without notice. Please visit our web site www.danets.com for the update. All rights reserved including all brand and product names mentioned in this manual are trademarks and/or registered trademarks of their respective holders

Linux Open Source Code

Certain danets products include software code developed by third parties, software code is subject to the GNU General Public License ("GPL") or GNU Lesser General Public License ("LGPL"). Please see the **GNU** (www.gnu.org) and **LPGL**(www.gnu.org) Websites to view the terms of each license. The GPL Code and LGPL Code used in danets products are distributed without any warranty and are subject to the copyrights of their authors. For details, see the GPL Code and LGPL Code licenses. You can download the firmware-files at http://www.danets.com under "Support" page.

Table of Contents

1. PACKING LIST 4

2. QUICK START 5

2.1 INSTALLATION AND DEVICE CONNECTION 5
2.2 CHOICE OF LOCATION 5
2.3 ADJUSTMENT 6

3. SCANNING THE WIFI SIGNAL – A QUICK GUIDE 7

3.1 MEDIATEK WIRELESS UTILITY (MEDIATEK) OR WINDOWS ZERO CONFIGURATION (WZC) 7
3.2 WORKING WITH WINDOWS ZERO CONFIGURATION (WZC) 8
3.2.1 Configuration of NIC by using WZC under Windows 7 and VISTA 8
3.2.2 Configuration of NIC by using WZC under Windows XP 9
3.3 WORKING WITH MEDIATEK 13

4. ADVANCED MEDIATEK FEATURES ON WINDOWS 8 AND 7 15

4.1 TURN ON/OFF RF 15
4.2 SECURITY 15
4.3 SIGNAL STRENGTH 15
4.4 SITE SURVEY 16
4.5 LINK INFORMATION 16
4.6 PROFILE 17
4.6.1 Example to Add a PROFILE with encryption 18
4.6.2 Example to Add a PROFILE without encryption 19
4.6.3 Example to setup an Ad-Hoc wireless connection 20
PC1: 21
PC2: 22

5. APPLE MAC OS X DRIVER INSTALLATION 25

5.1 LOCATE THE DRIVER IN THE CD-ROM 25
5.2 MAC OS X DRIVER INSTALLATION 25
5.3 RUNNING THE WIRELESS UTILITY 29
5.4 SITE SURVEY 30
5.4.1 Connecting to a Wireless Network 30
5.4.2 Keying in the Authentication\ Encription Password 31

APPENDIX I 33

© 2015 by danets Datacom Network Ltd. All rights reserved.

1. Packing List

Installation of the USB-Yagi is straight forward. As soon as you open up the box, you will be able to find the following items:

A USB-Yagi High Power Plug & Play antenna with a tripod
A USB2.0 extender cable
A CD-ROM software drivers for Windows 8/7/VISTA/XP, Linux and MAC OS X
An installation guide

If you plan to build the Universal WiFi Repeater using the +35dBm NextG USB-Yagi Plug & Play Antenna, you could purchase the USB-Omni kit online from the link below.

http://www.danets.com/turbotenna/UsbOmniApRepeater.php

Add the Power RF Amplifier Kit from the link below if extra horse power is required.

http://www.danets.com/turbotenna/PowerAmpKit.php

© 2015 by danets Datacom Network Ltd. All rights reserved.

2. Quick Start

2.1 Installation and Device Connection

Install the CD-ROM software driver before you plug in the USB-Yagi antenna to you PC or laptop computer. This avoids the antenna being recognized by another existing WiFi software driver which might not be fully compatible with the antenna's original software driver.

Before making any device and cable connection to the computer, you have to install the CD software driver and utility from fresh.

Your CD should have the most current software version. Otherwise, you could obtain the latest software driver and utility in the link below.

For Apple MAC OS X 10.8 Mountain Lion
http://www.danets.com/download/RTUSB_D2870-4.2.6.0_UI-4.0.8.0_2012_09_28.dmg

For Windows 7 and VISTA
http://www.danets.com/support/Windows7DriverMediatek.exe

For Windows 8
http://www.danets.com/support/Windows8DriverMediatek.exe

For Windows XP
http://www.danets.com/support/WindowsXpDriverMediatek.exe

Insert the CD-ROM into the CD/DVD drive of your computer.

As soon as the AutoPlay window appears, double click "SETUP.EXE" to install the software driver. If the AutoPlay window does not pop up, you could also go to the CD/DVD drive under "My Computer" and double click the SETUP icon.

Reboot your computer.

Once completed, you could plug in the USB-Yagi antenna to any spare USB port of your computer using the USB2.0 cable supplied in the kit.

2.2 Choice of Location

You may either setup the antenna on a table or a tall wooden book shelf near the ceiling. Extend the legs of the tripod to maintain stability. Never put the antenna on a metal cabinet or behind a metal structure. If you intend to setup the antenna outdoor such as roof top, balconies, poles or towers, be sure to install an arrestor for lightning protection.

Once you have chosen the location, make sure that your RF cable is long enough to each your wireless router or WLAN client adapter device. Point the antenna in the direction of the signal source.

© 2015 by danets Datacom Network Ltd. All rights reserved.

2.3 Adjustment

Ideally the antenna should be pointing at the signal source whitout any obstructions. If there is a wall getting in the way, try to veer the antenna in other directions until you find the sweet spot with the best signal strength.

Because the antenna has linear polarization, you may find that you get a better signal by rotating it slightly clockwise or anti-clockwise on the tripod along its cylindrical axis.

Since the RF cable is pretty rigid, special attention is required for connecting the RP-SMA end of the cable to the Repeater in order not to break off the connector from the Repeater's casing.

Cable tie is recommended to fix the cable before fitting it in the Repeater.

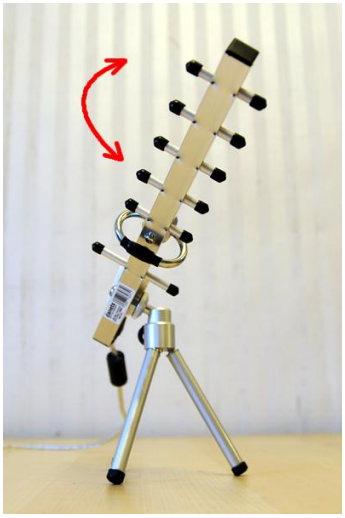


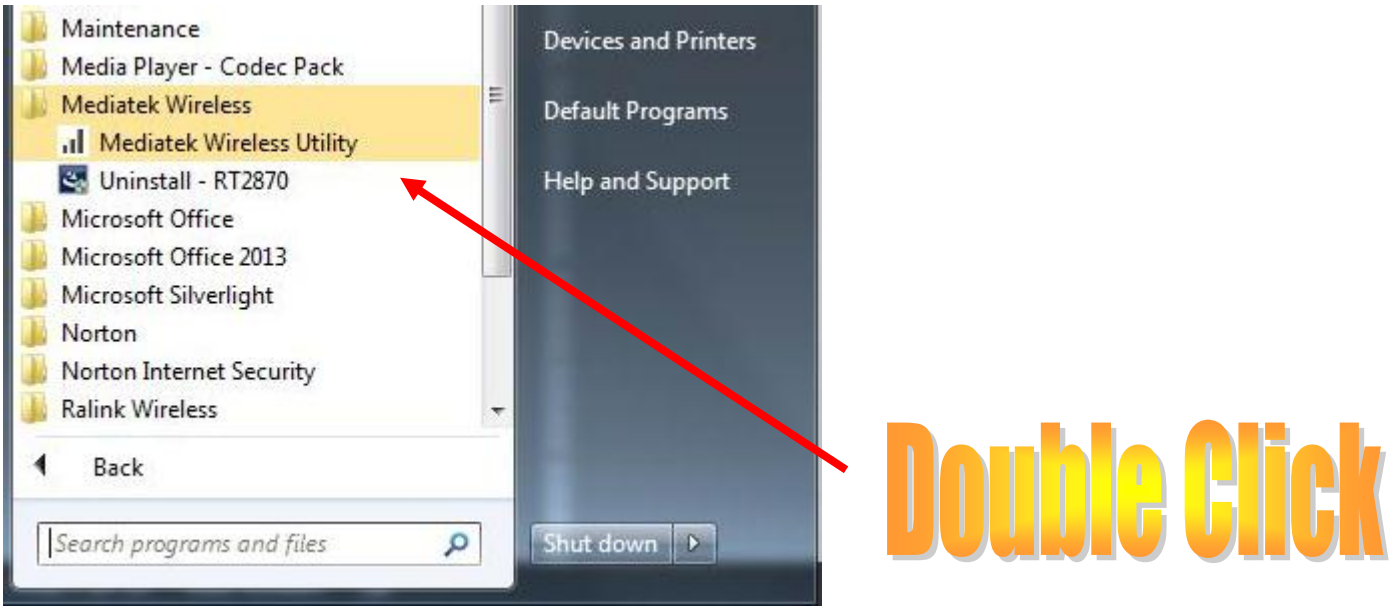
Figure 1 Rotate to change the angle of polarization for optimal signal reception.

© 2015 by danets Datacom Network Ltd. All rights reserved.

3. Scanning the WiFi Signal – A Quick Guide

3.1 MEDIATEK WIRELESS UTILITY (Mediatek) OR WINDOWS ZERO CONFIGURATION (WZC)

As the title suggests, two types of wireless utilities are possible. The Windows Zero Configuration provides the basic wireless networking configuration whose user interface is consistent across various Windows Operating Systems from XP, VISTA to Windows 7; and the more sophisticated Mediatek Wireless Utility (Mediatek) with the WPA supplicant functionality.



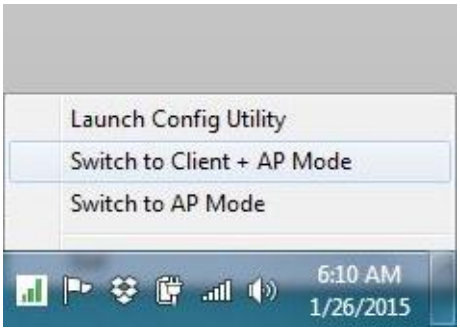
As soon as Windows starts, you could invoke the Mediatek Wireless Utility from the "All Programs" Start Menu (see above) so that the Mediatek icon appears at the lower right hand corner of the computer screen.

Mediatek

Or you may setup the network connection using the Windows Network and Sharing Center (also known as Windows Zero Configuration, WZC). Windows 7 is used for the purpose of illustration.

Mediatek works in parallel with WZC. When WZC is active, Mediatek provides only the monitoring function, such as showing the link stats, network status, statistic counters, advance feature status, WMM status and WPS status. It won't interfere with WZC's configuration or profile functions.

© 2015 by danets Datacom Network Ltd. All rights reserved.

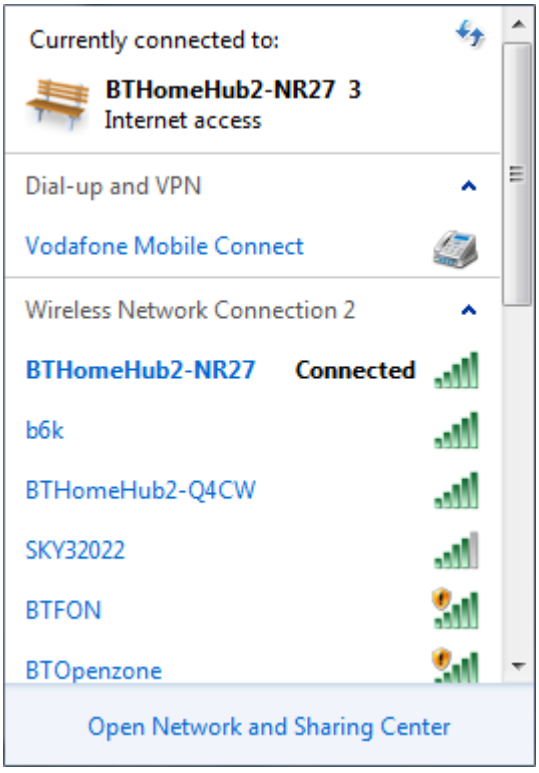


3.2 Working with Windows Zero Configuration (WZC)

Go to Section 3.3 if you want to use Mediatek instead.

3.2.1 Configuration of NIC by using WZC under Windows 7 and VISTA

When WZC is activated, you could attempt to connect to one of the wireless networks picked up by the antenna. If the wireless network is encrypted, a pop-up box will appear prompting you to key in its security password.



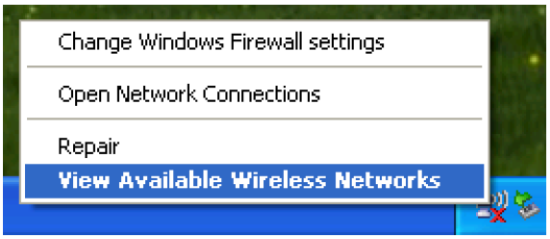
© 2015 by danets Datacom Network Ltd. All rights reserved.

3.2.2 Configuration of NIC by using WZC under Windows XP

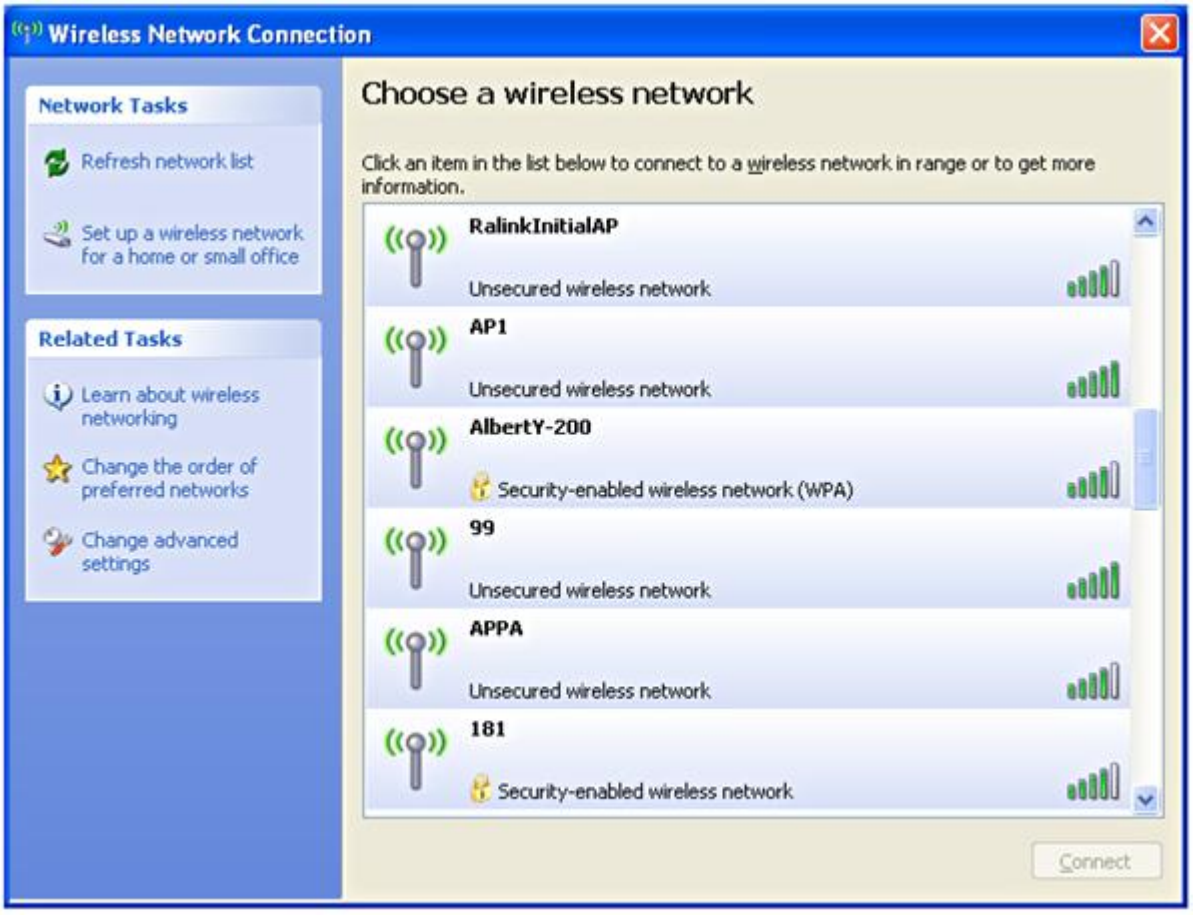
Before you connect to any wireless network, the status prompt pops up like this:

Wireless networks detected
One or more wireless networks are in range of this computer.
To see the list and connect, click this message

Right click the Network Connection icon in the task bar, and select "View Available Wireless Networks:

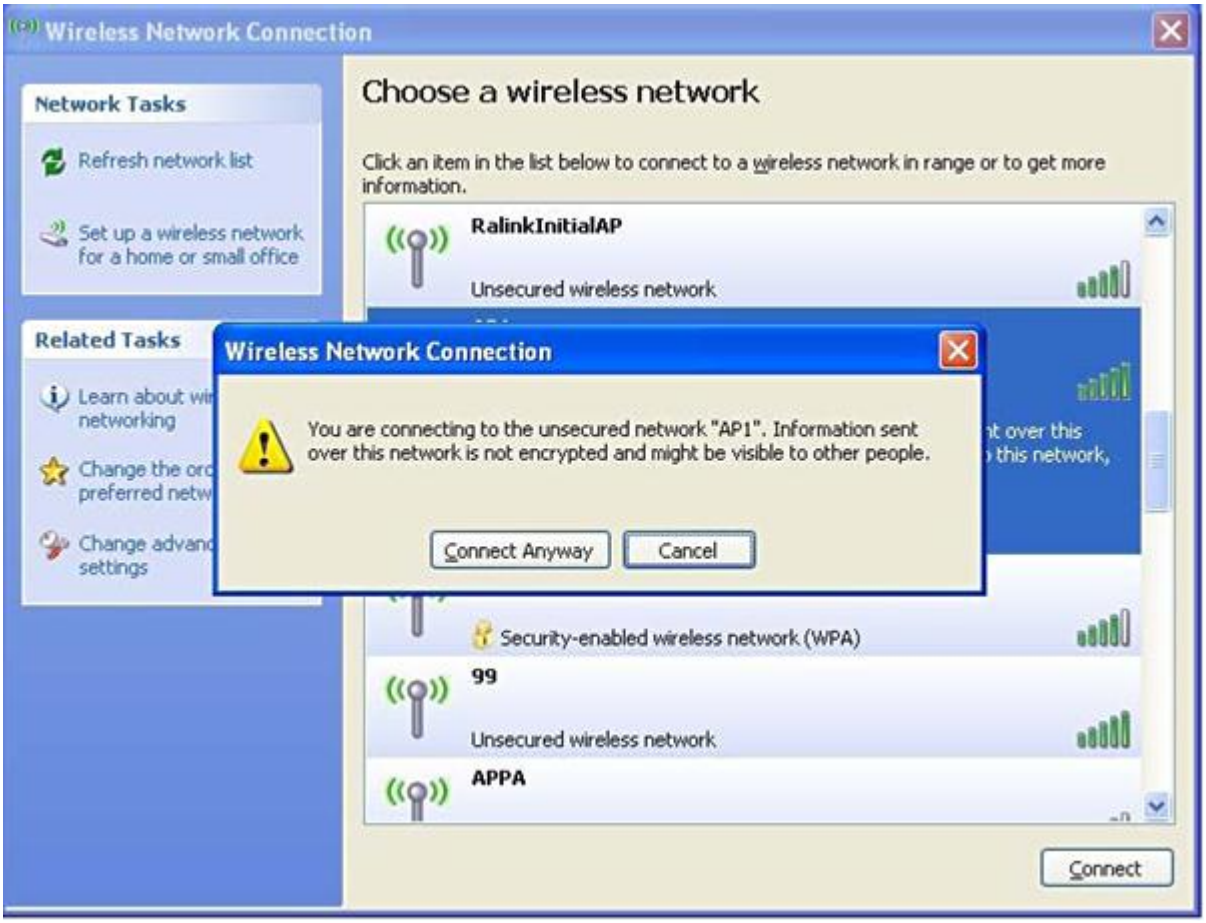


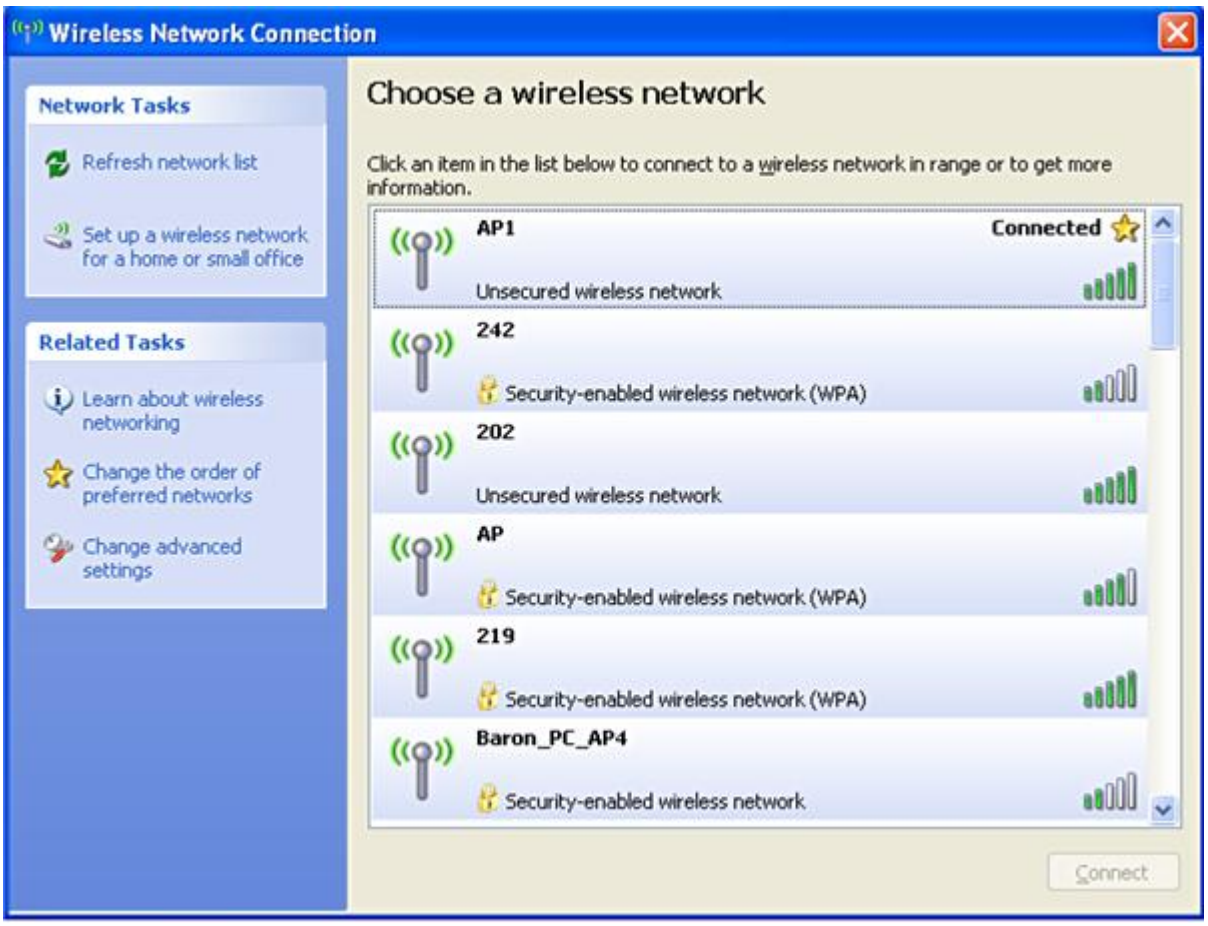
A new window pops up showing the list of Access Points (or APs) available for connection.



You may either double click the SSID or highlight it with the mouse pointer followed by clicking "Connect Anyway".

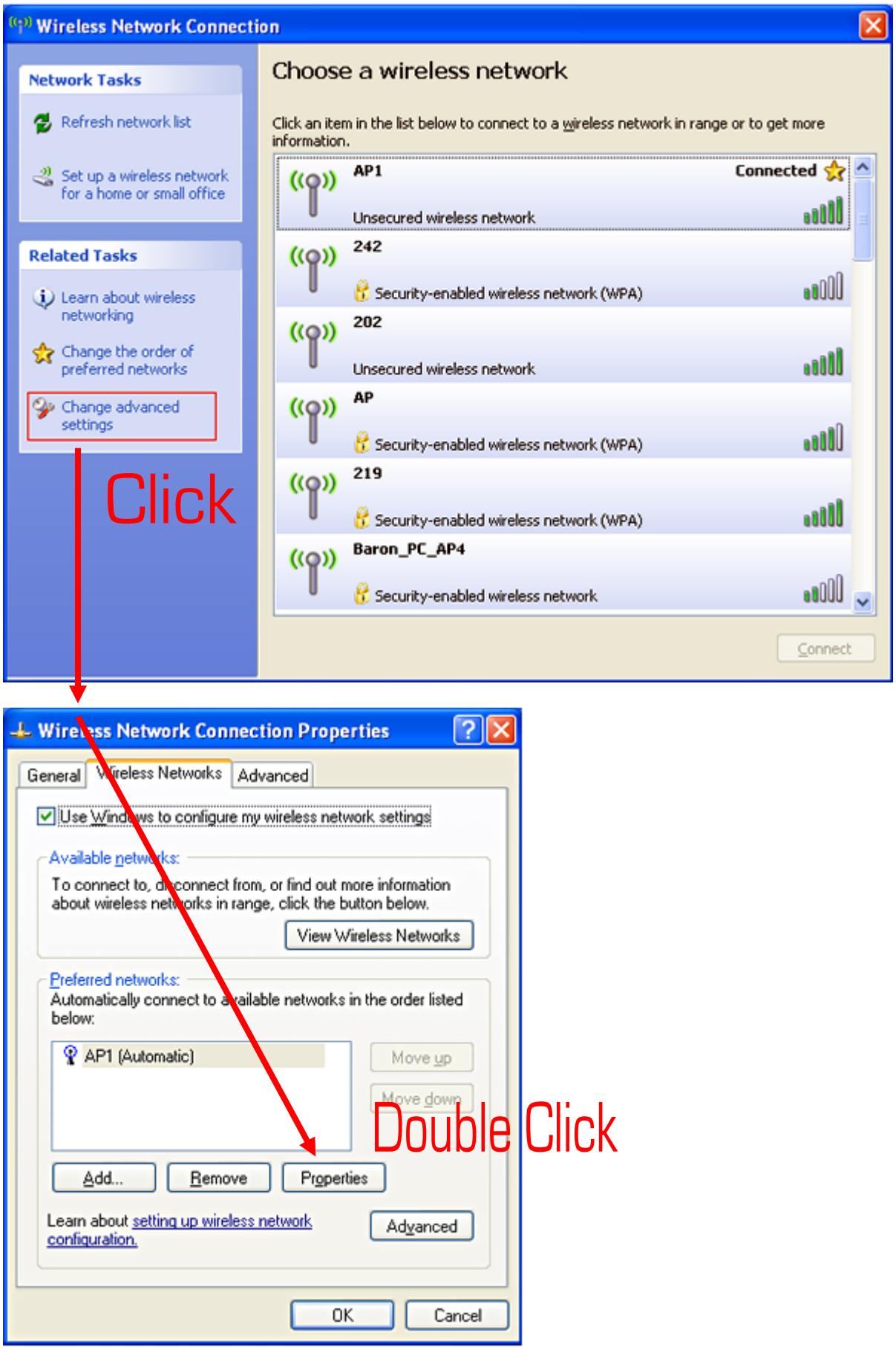
© 2015 by danets Datacom Network Ltd. All rights reserved.


Wireless Network Connection
Network Tasks
Refresh network list
Set up a wireless network for a home or small office
Related Tasks
Learn about wi networking
Change the orc preferred netw
Change advanc settings
Choose a wireless network
Click an item in the list below to connect to a wireless network in range or to get more information.
RalinkInitialAP
Unsecured wireless network
Wireless Network Connection
You are connecting to the unsecured network "AP1". Information sent over this network is not encrypted and might be visible to other people.
Connect Anyway
Cancel
t over this this network,
Security-enabled wireless network (WPA)
99
Unsecured wireless network
APPA
Connect



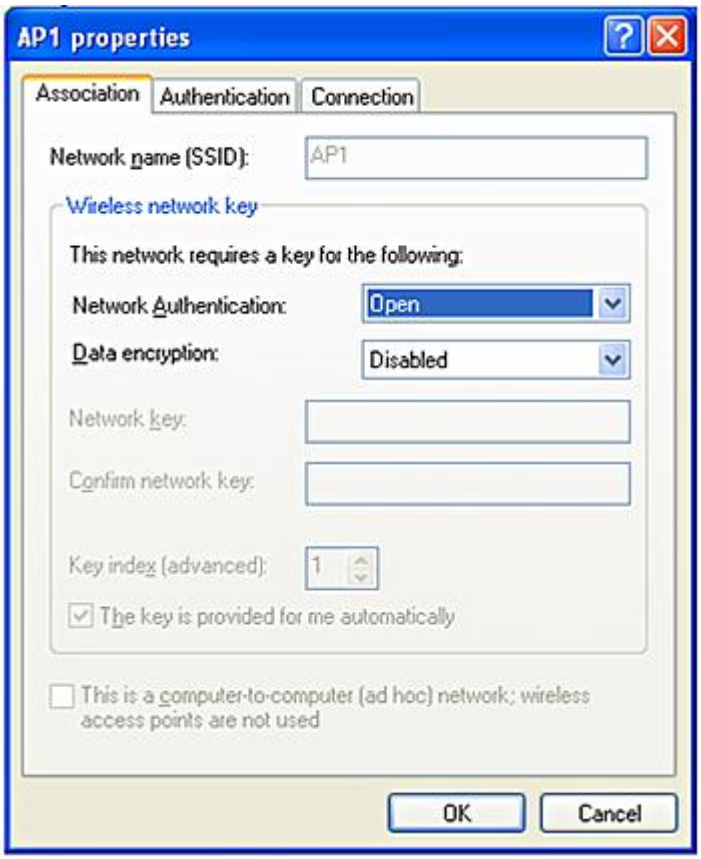
© 2015 by danets Datacom Network Ltd. All rights reserved.

If you want to update the AP attributes, click “Change Advanced Settings”, then chose the “Wireless Networks”.

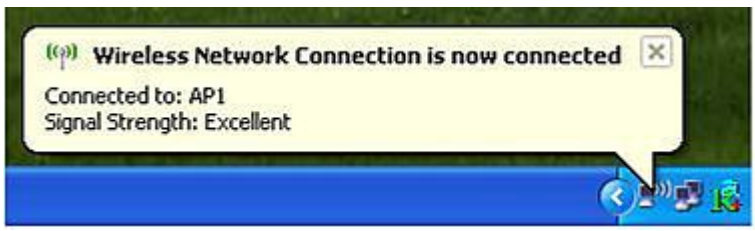


© 2015 by danets Datacom Network Ltd. All rights reserved.

Double click “Properties” to check the Wireless network key or enter the security password.



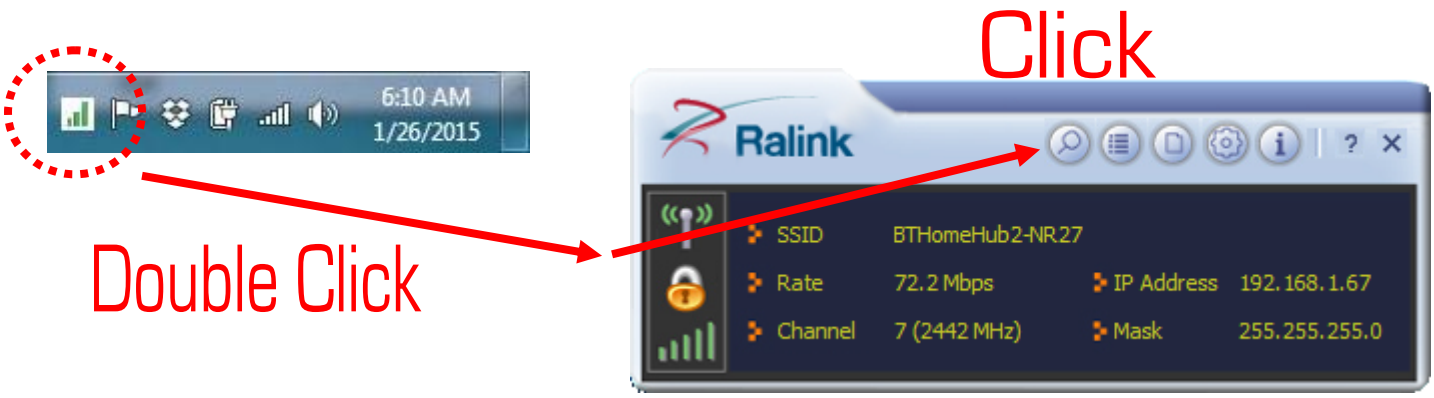
Wireless connection is successful if the Wireless network key is authenticated.



© 2015 by danets Datacom Network Ltd. All rights reserved.

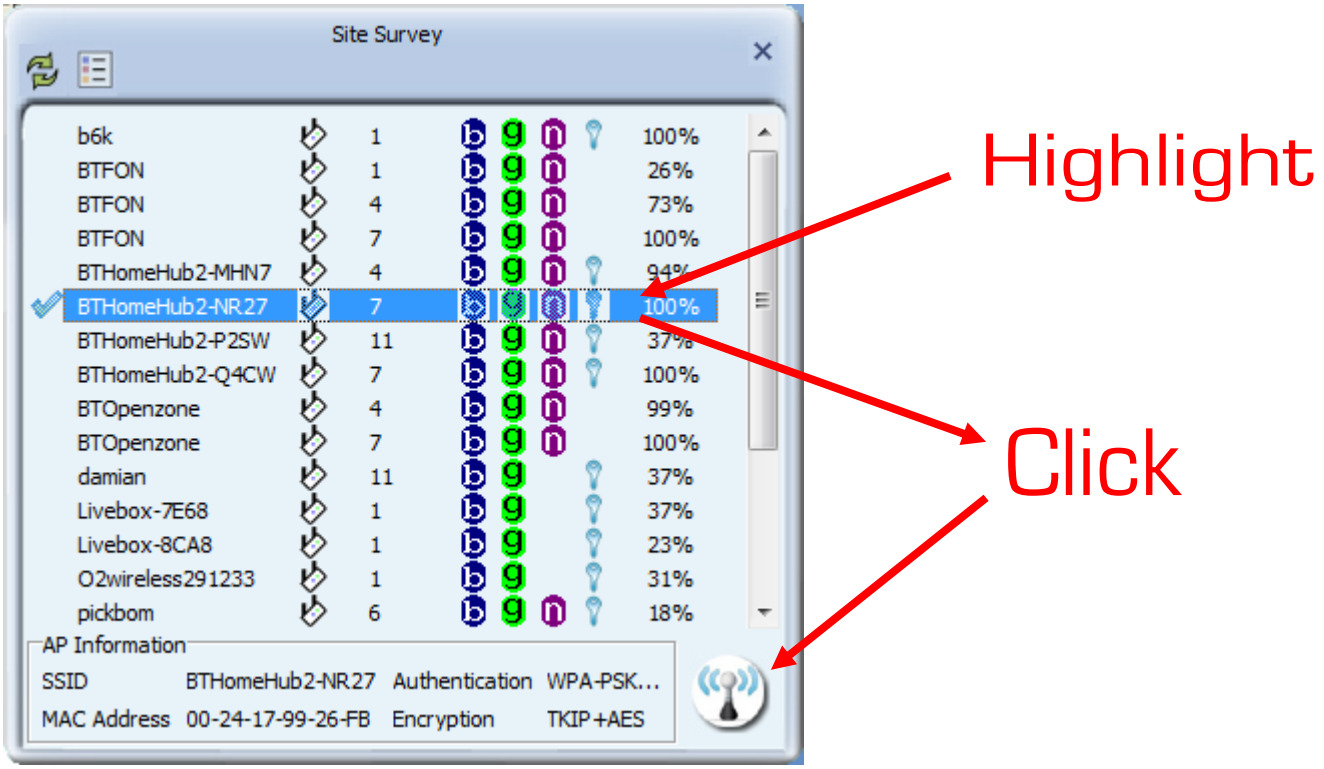
3.3 Working with Mediatek

When Mediatek is active, a small Mediatek icon appears at the lower right hand corner of the screen.



Double click on it to bring up the Mediatek main window.

Click on the Site Survey icon to bring up a list of AP(s) picked up by the antenna. Each row contains the AP, network type, channel used, wireless mode, security status and signal strength.



Simply highlight the AP and click "Connect". If the AP is encrypted, you'll be asked to enter the password for authentication as shown in the following pictures.

© 2015 by danets Datacom Network Ltd. All rights reserved.

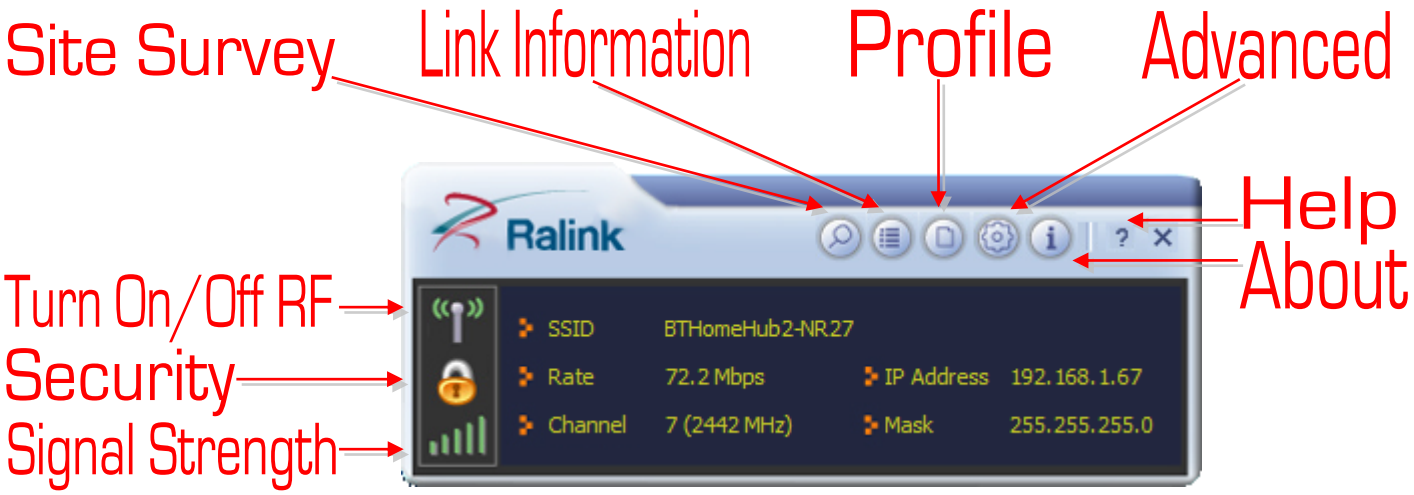
Once connected, a small tick appears on the left of the AP, and the Mediatek icon becomes .

How does the Mediatek icon represent the various network statuses? Here are the clues:

- Connected and signal strength is Good.
- Connected and signal strength is Normal.
- Not Connected.
- Wireless NIC not detected.
- Connected but signal strength is Weak.

© 2015 by danets Datacom Network Ltd. All rights reserved.

4. Advanced Mediatek Features on Windows 8 and 7



4.1 Turn On/Off RF

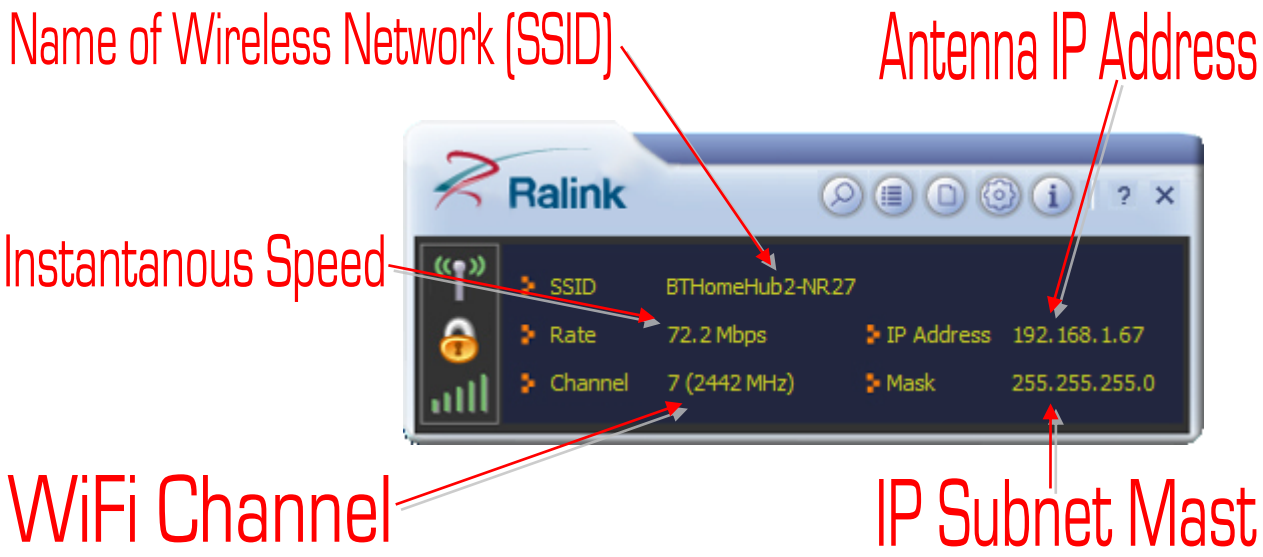
It is a toggle switch to turn on and off the antenna. When the RF is off, no wireless transmission and reception will take place.

4.2 Security

It is an indicator whether the wireless network is secured (lock closed) or unsecured (lock open).

4.3 Signal Strength

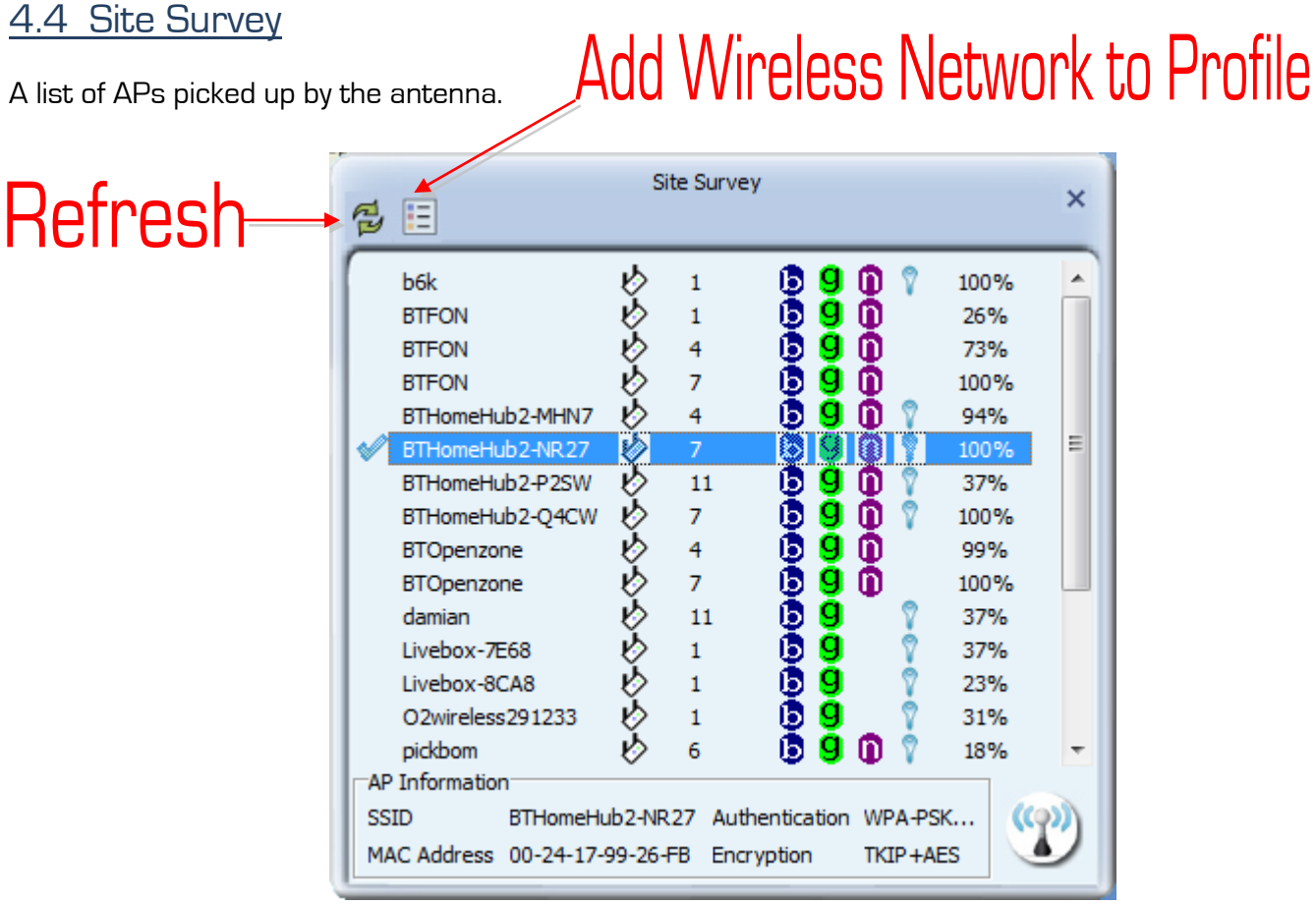
A five bar indicator of the signal strength. It shows the signal strength in terms of percentage when the mouse is over the signal strength icon.



© 2015 by danets Datacom Network Ltd. All rights reserved.

4.4 Site Survey

A list of APs picked up by the antenna.



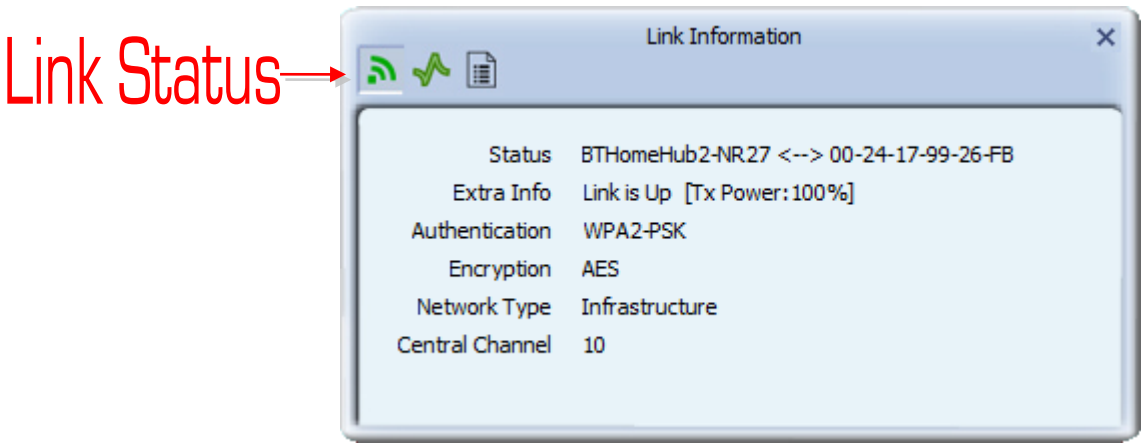
To connect to an AP, simply highlight it, followed by clicking the "Connect" button.

If the intended network has encryption other than "None", the RaUL will bring up the security page that allows the user to enter the password to complete the connection.

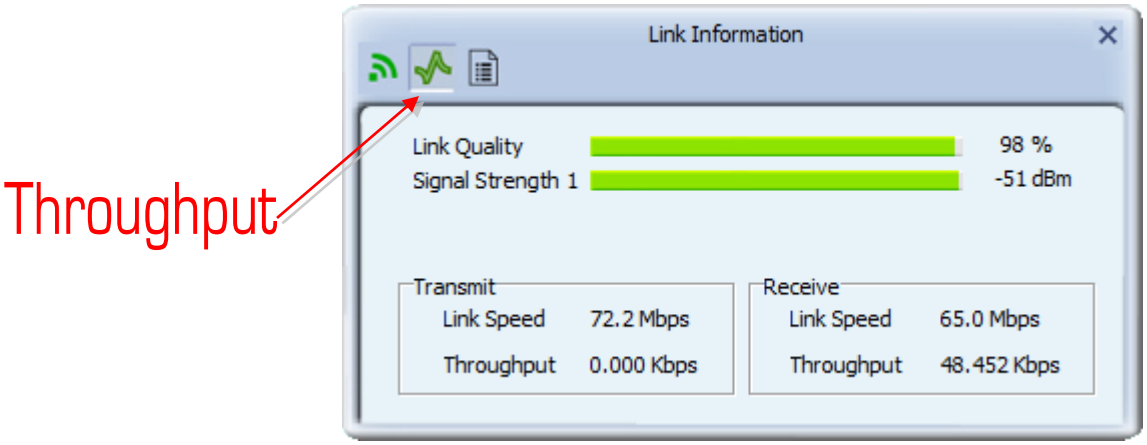
The AP information is shown at the bottom of the "Site Survey" window.

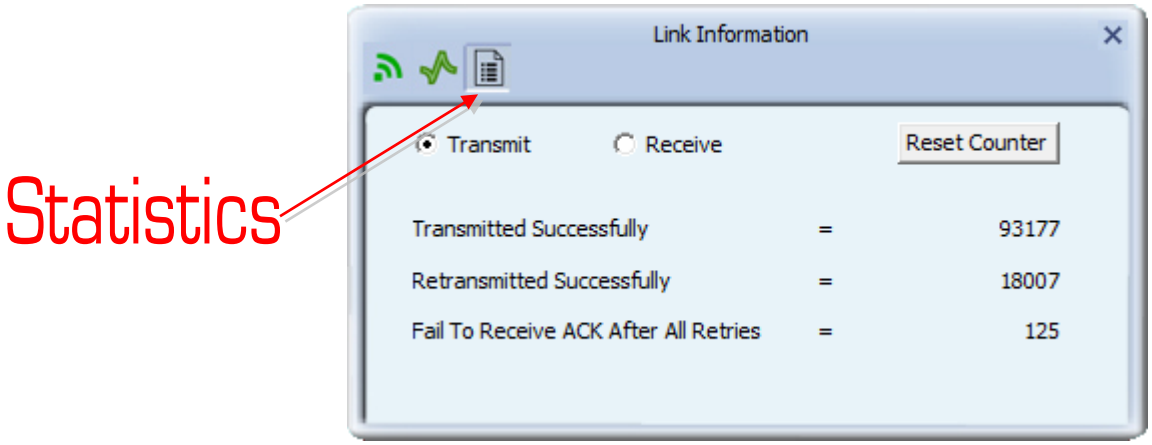
4.5 Link Information

The Link Information consists of the instantaneous Link Status, Throughput and Statistics of the antenna.



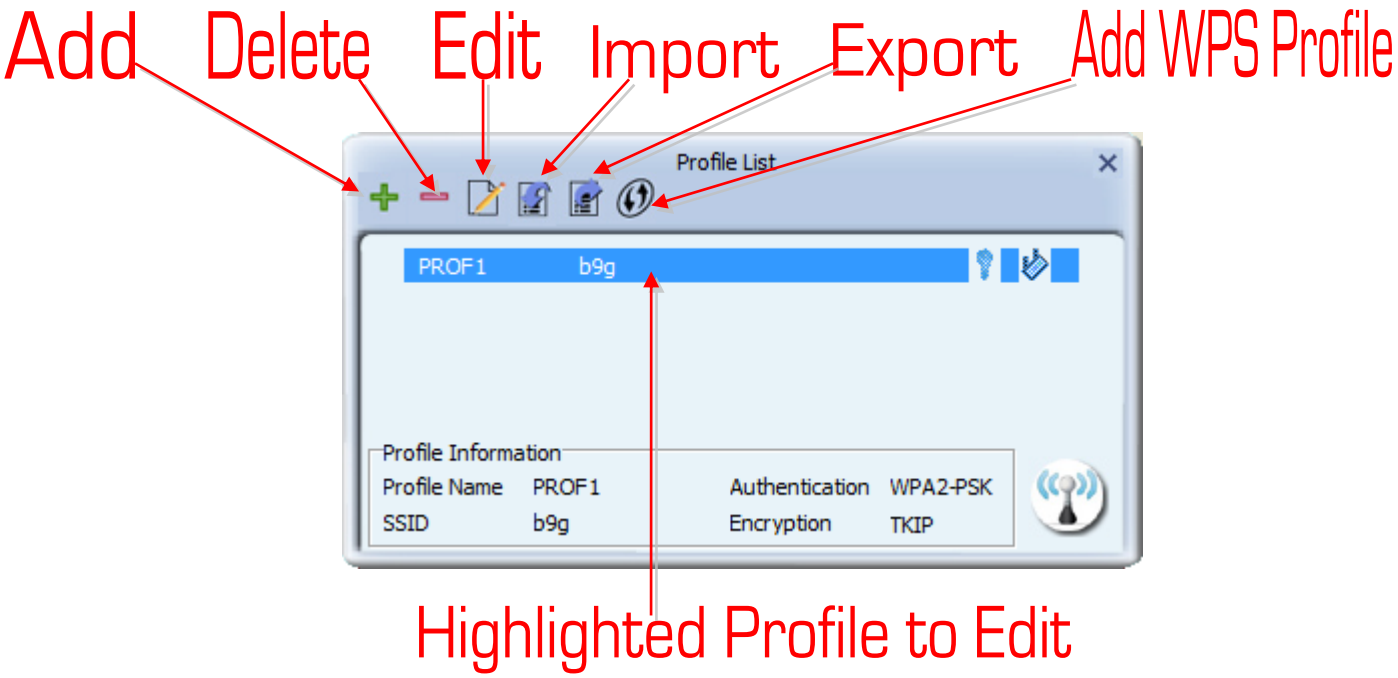
© 2015 by danets Datacom Network Ltd. All rights reserved.





4.6 Profile

A profile is a place to save your favorite wireless networks for one-click connection.



© 2015 by danets Datacom Network Ltd. All rights reserved.

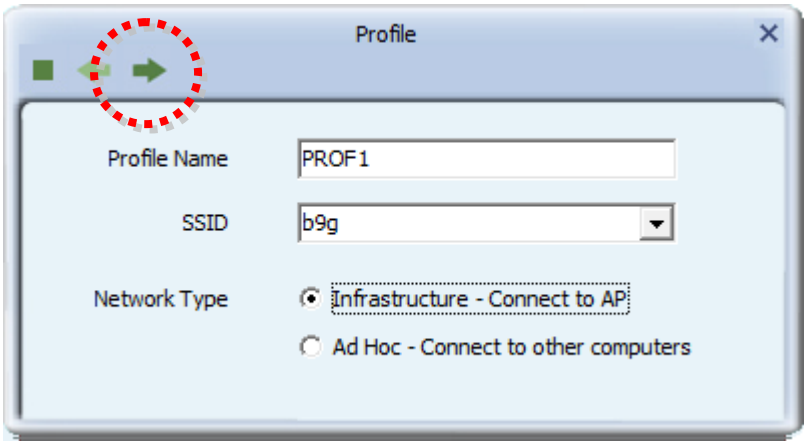
Profile Key	Descriptions
Add "+"	Create a new profile
Delete "-"	Remove a highlighted profile
Edit	Edit a highlighted profile
Import	Pull up a bunch of saved profiles from your disk in the format of *.prof; where * is a filename
Export	Save a profile to your disk in the format of *.prof
Add WPS Profile	Connect the antenna to the AP using either the Push-Button Configuration (PBC) or PIN Numeric Code. See Appendix I for Wi-Fi Protected Setup (WPS)
About	Shows the Mediatek version and the MAC address of the antenna. The MAC address refers to the unique ID of the wifi adapter of your laptop and the USB-Yagi antenna.
Help	HTML Quick Reference

4.6.1 Example to Add a PROFILE with encryption

Click "Add" under PROFILE. PROF1 is a default profile name. You may key in a different profile name to replace it. Next, choose "Infrastructure – Connect to AP" for picking up the WiFi signal from a wireless router;

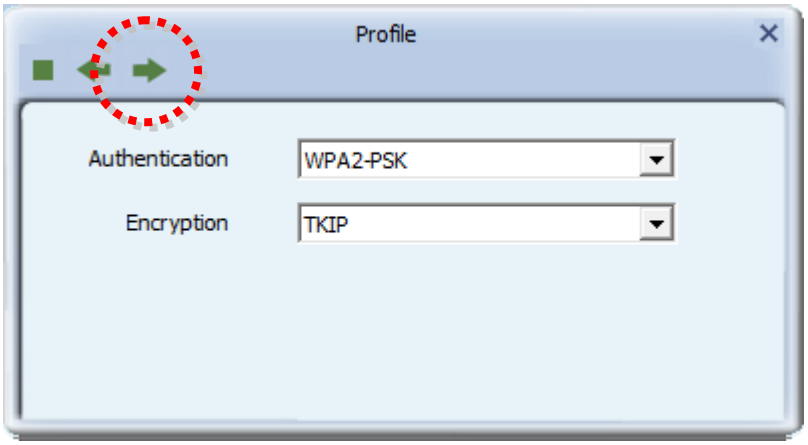
Or, choose "Ad Hoc – Connect to other computers" for setting up a wireless link with another computer without going through a wireless router. See 4.6.3 for a brief tutorial.

Click



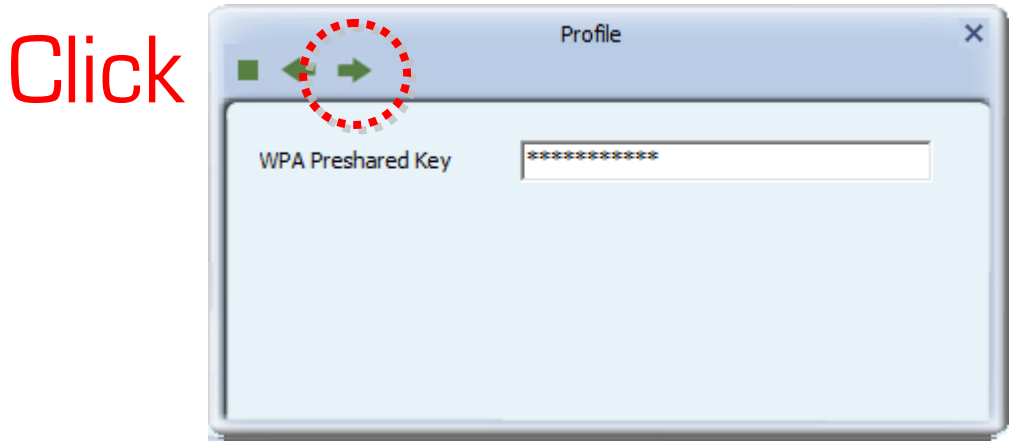
Click to setup the wireless security.

Click

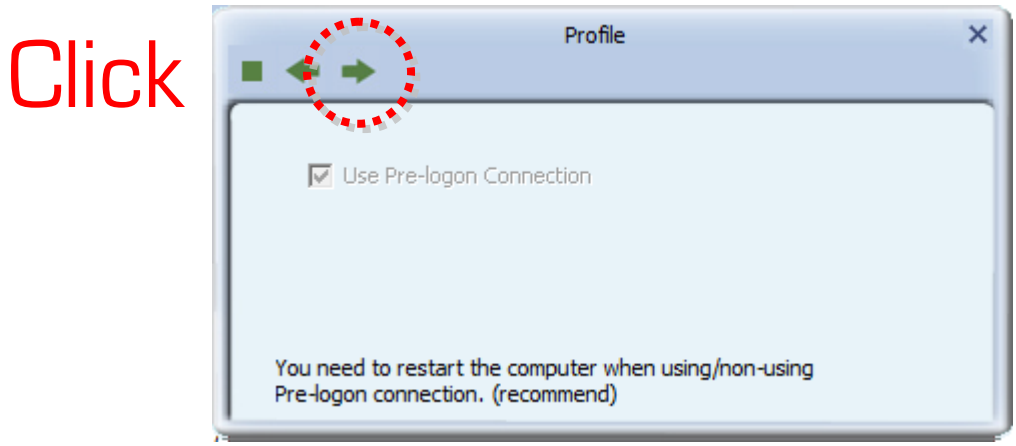


© 2015 by danets Datacom Network Ltd. All rights reserved.

Click to enter the wireless security password in the box.

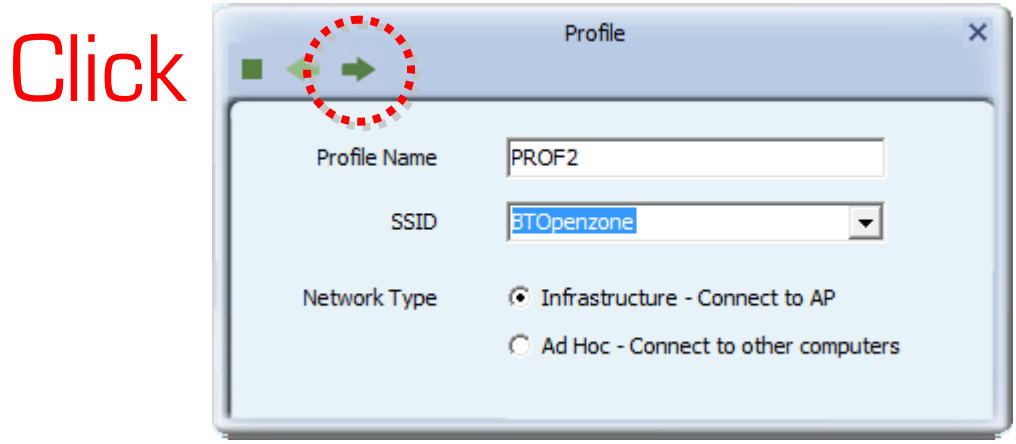


Click to exit the profile setup.



4.6.2 Example to Add a PROFILE without encryption

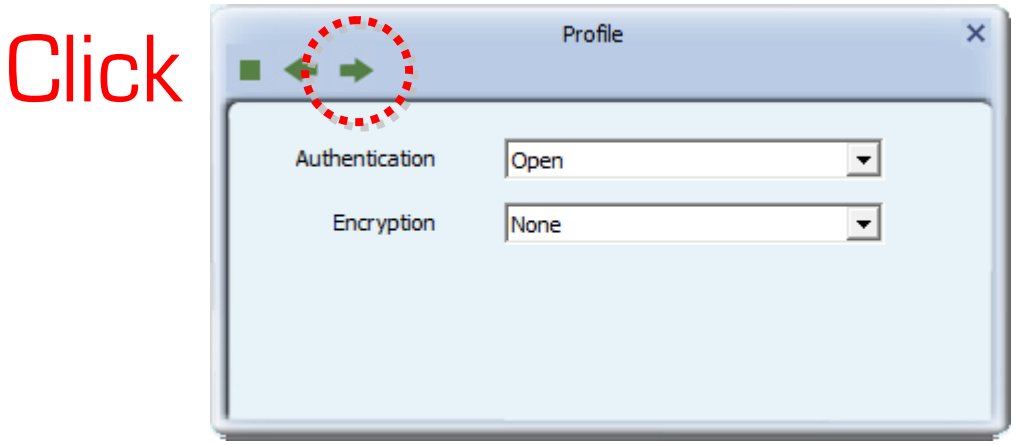
Click "Add" under PROFILE.



The Add Profile page will then pop up. The default Profile Name is PROF1 but you may change to a different name such as PROF2. Now move the mouse to the "SSID" pull-down menu and select the wireless router from an active list of SSID(s) within range.

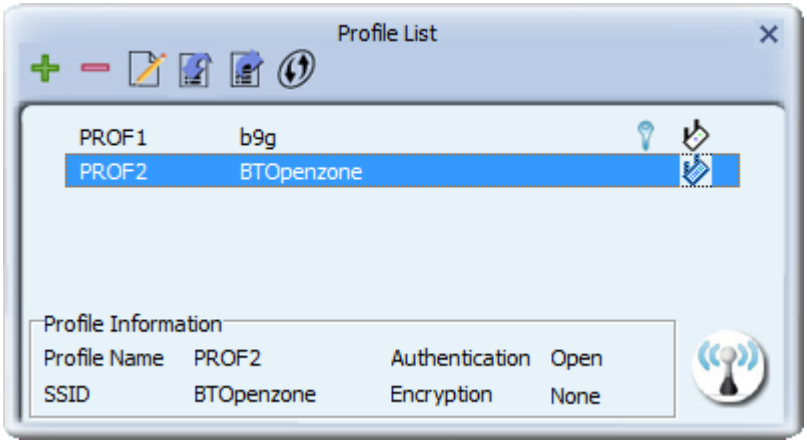
© 2015 by danets Datacom Network Ltd. All rights reserved.

Click to setup no password encryption, Choose "Open" under the Authentication pull-down menu and "None" under Encryption.



BTOpenzone is one of the SSIDs within range in this example. Although it is a public WiFi hotspot with an open WiFi authentication to which anybody is able to connect, further username and password authentication (technically known as 802.1x authentication) on its web page is required before you could actually get on the Internet.

Click and PROF2 shows up in the Profile List.



Technically speaking, you should be able to connect to an unsecured WiFi signal within range and get on the Internet unless it is a hotspot with 802.1x authentication as in the case of the above BTOpenzone example; or the wireless router has a white list of MAC addresses. A MAC address is a unique ID of every network adapter. Some smart users maintain such a white list in their wireless routers and yet leave the security open. If the MAC address of your antenna is not one of those in the white list, you'll then be denied the right to access the Internet.

4.6.3 Example to setup an Ad-Hoc wireless connection

Infrastructure is a common mode that we use to connect to a wireless router. Ad-Hoc, on the other hand, is the other way to setup a direct wireless connection between two computers for file and resource sharing.

Here's how it works.

© 2015 by danets Datacom Network Ltd. All rights reserved.

Let's define your computer as **PC1** with the NextG USB-Yagi antenna and **PC2** is another WiFi enabled computer.

Both the computers as configured as follows,

PC1:

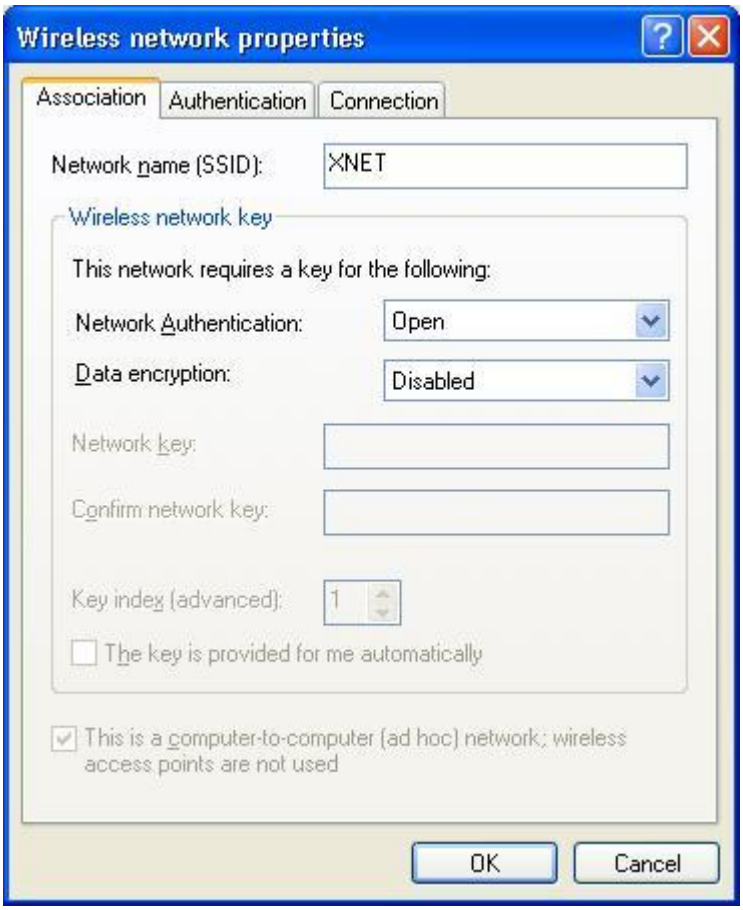
1. Just right-click "My Computer" and click Properties.
2. Select the "Computer Name" tab and click the "Change" button.
3. Change the computer name to whatever you want, here we name it PC1. Change the workgroup to WG. (You may use a workgroup name other than WG but it should be the same in both computers)
4. Click OK.

Go to Start > My Computer > My Network Places > Network Connections.
Right click on your wireless adapter and select Properties. Go to the Wireless Network Tab and click on the Advanced button. Select Computer to Computer (Ad hoc) networking option.
If you get a window with an SSID box, you can specify the network name in it, in our example we use XNET.

Now go to your Wireless Adapter >> Properties >> Wireless Networks and click Add Preferred Networks.

Enter the settings as follows:

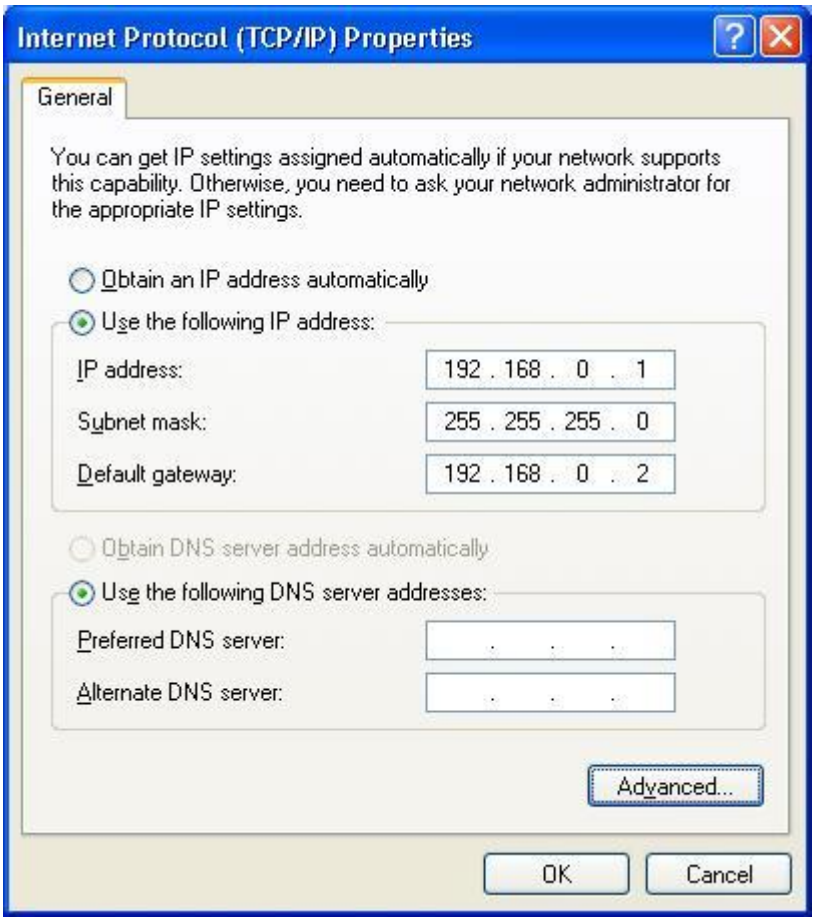
Network name (SSID) : XNET
Network Authentication : Open
Data Encryption : Disabled
Also, do tick the – This is a computer-to-computer (ad hoc) network, wireless access points are not used option if it isn't already done.



© 2015 by danets Datacom Network Ltd. All rights reserved.

To automatically connect to the network, select the Connection tab and tick on the Connect automatically when in range option.

Now, to configure the TCP/IP connection settings,
1. Goto "Control Panel" >> "Network connections"
2. Right-click on your Wireless Adapter and click "Properties". In the "General" tab, select "Internet Protocol (TCP/IP)". Click the "Properties" button.
3. Set the Values
IP Address – 192.168.0.1
Subnet Mask – 255.255.255.0
Default Gateway – 192.168.0.2
4. Click OK and you are done for PC1.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address:
192 . 168 . 0 . 1
Subnet mask:
255 . 255 . 255 . 0
Default gateway:
192 . 168 . 0 . 2
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

PC2:

1. Just right-click "My Computer" and click Properties.
2. Select the "Computer Name" tab and click the "Change" button.
3. Change the computer name to PC2. Change the workgroup to WG. (The workgroup name should be the same in both computers)
4. Click OK.

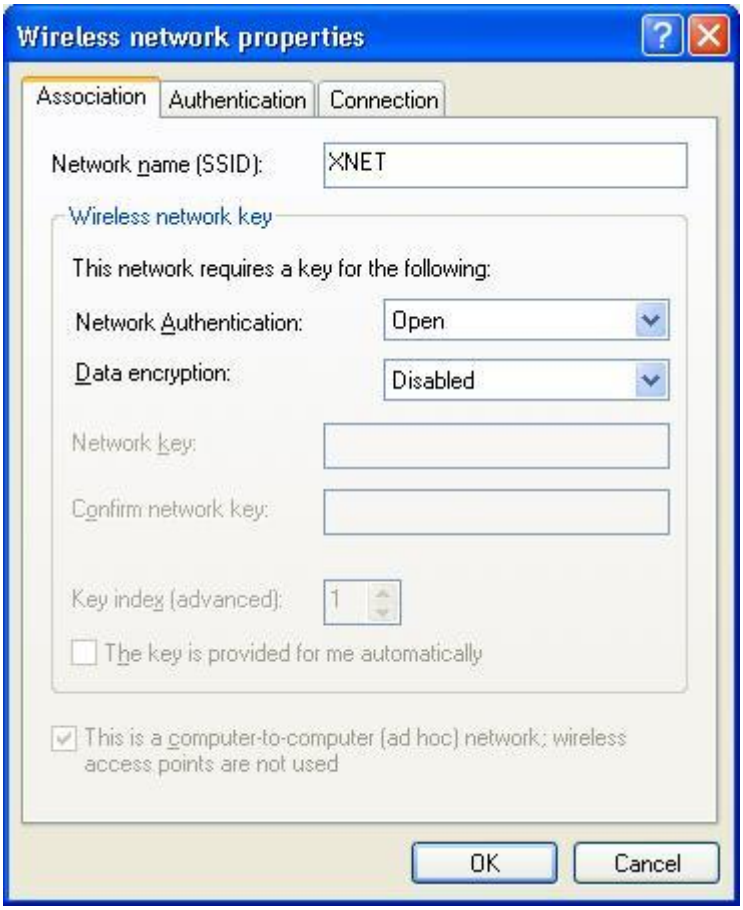
Go to Start > My Computer > My Network Places > Network Connections.
Right click on your wireless adapter and select Properties. Go to the Wireless Network Tab and click on the Advanced button. Select Computer to Computer (Ad hoc) networking option.
If you get a window with an SSID box, you can specify the network name in it, in our example we use XNET.

Now go to your Wireless Adapter >> Properties >> Wireless Networks and click Add Preferred Networks.

© 2015 by danets Datacom Network Ltd. All rights reserved.

Enter the settings as follows:

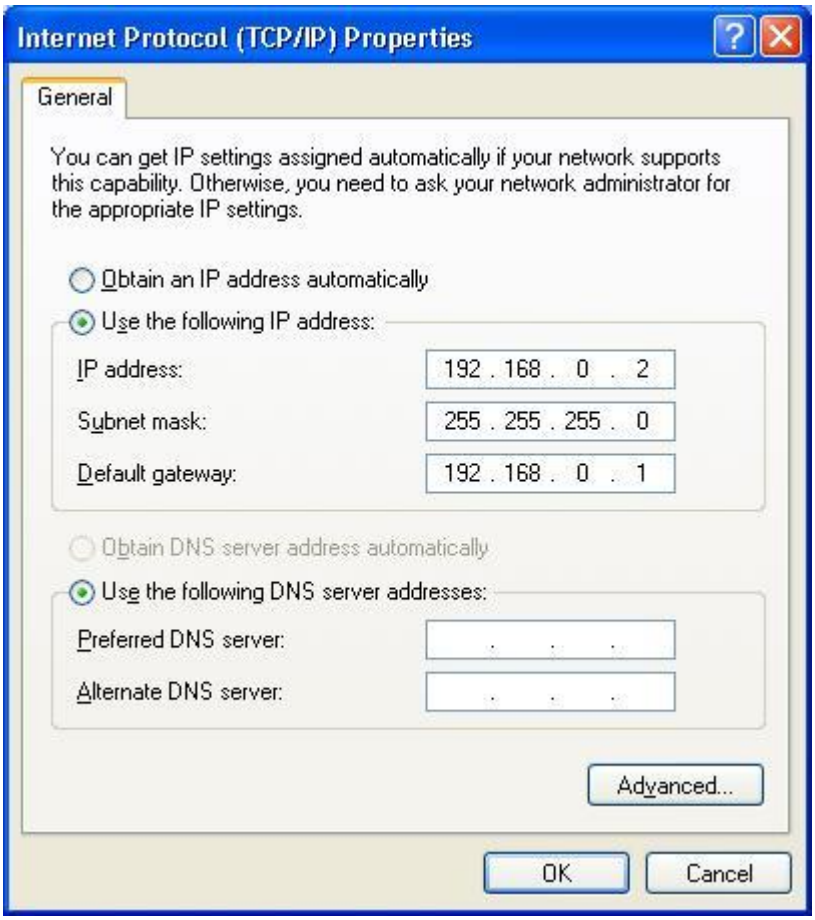
Network name (SSID) : XNET
Network Authentication : Open
Data Encryption : Disabled
Also, do tick the – This is a computer-to-computer (ad hoc) network, wireless access points are not used option if it isn't already done.



To automatically connect to the network, select the Connection tab and tick on the Connect automatically when in range option.

Now, to configure the TCP/IP connection settings,
1. Goto "Control Panel" >> "Network connections"
2. Right-click on your Wireless Adapter and click "Properties". In the "General" tab, select "Internet Protocol (TCP/IP)". Click the "Properties" button.
3. Set the Values
IP Address – 192.168.0.2
Subnet Mask – 255.255.255.0
Default Gateway – 192.168.0.1
4. Click OK and you are all set with PC2 as well.

© 2015 by danets Datacom Network Ltd. All rights reserved.


Internet Protocol (TCP/IP) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 0 . 2
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 0 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server:
Alternate DNS server:
Advanced...
OK
Cancel

You are almost done now.
Just open the Wireless network settings and click on View Available Wireless Networks. Select your network and you are connected.

Note :
1. The settings mentioned may vary in case of different adapters. But most of them should be similar to the above settings.
2. Your adapter should be compatible with WZC – Windows Zero Configuration.

© 2015 by danets Datacom Network Ltd. All rights reserved.

5. Apple MAC OS X Driver Installation

5.1 Locate the driver in the CD-ROM

The CD-ROM that comes with the kit is a mini DISC. If your Apple computer reads the standard size DISC, you might either make a DISC conversion, or download the latest driver on the link below.

For Apple MAC OS X 10.8 Mountain Lion
http://www.danets.com/download/RTUSB_D2870-4.2.6.0_UI-4.0.8.0_2012_09_28.dmg

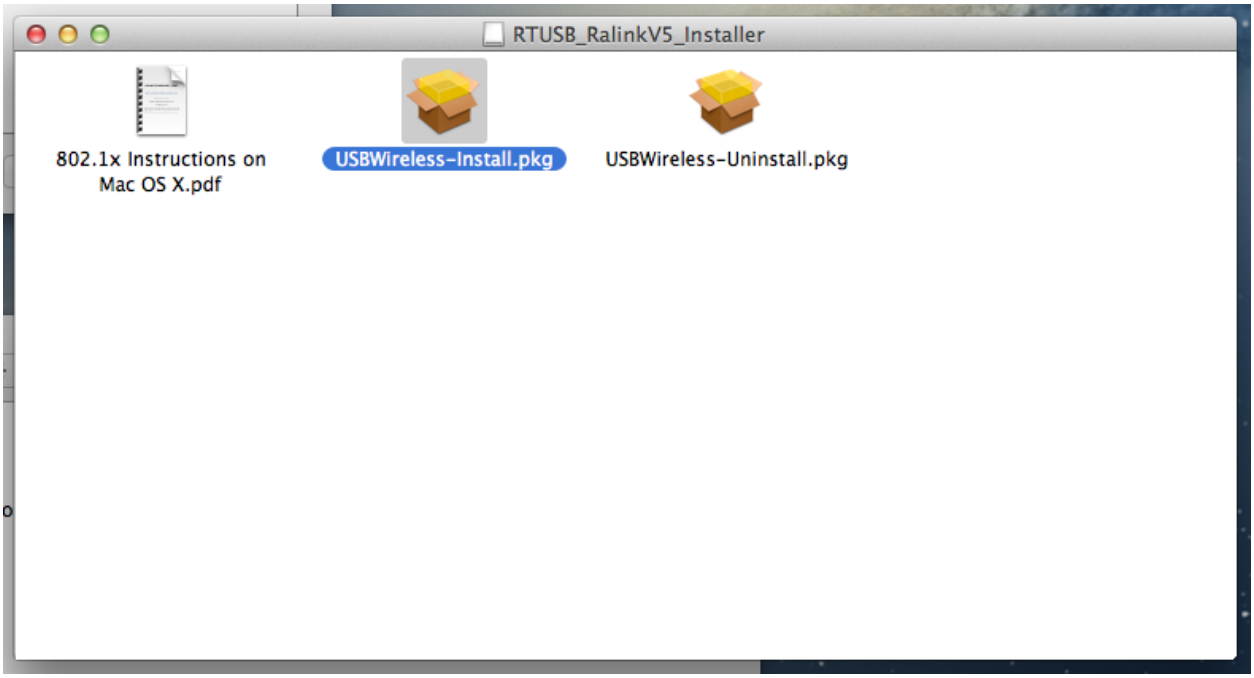
For DISC conversion, you just need to copy all the files under the mini DISC directory below to a standard size DISC.

Your CD-ROM Drive:\Other Drivers\Mac OS X 10.4 10.5 10.6 10.7 10.8

5.2 MAC OS X Driver Installation

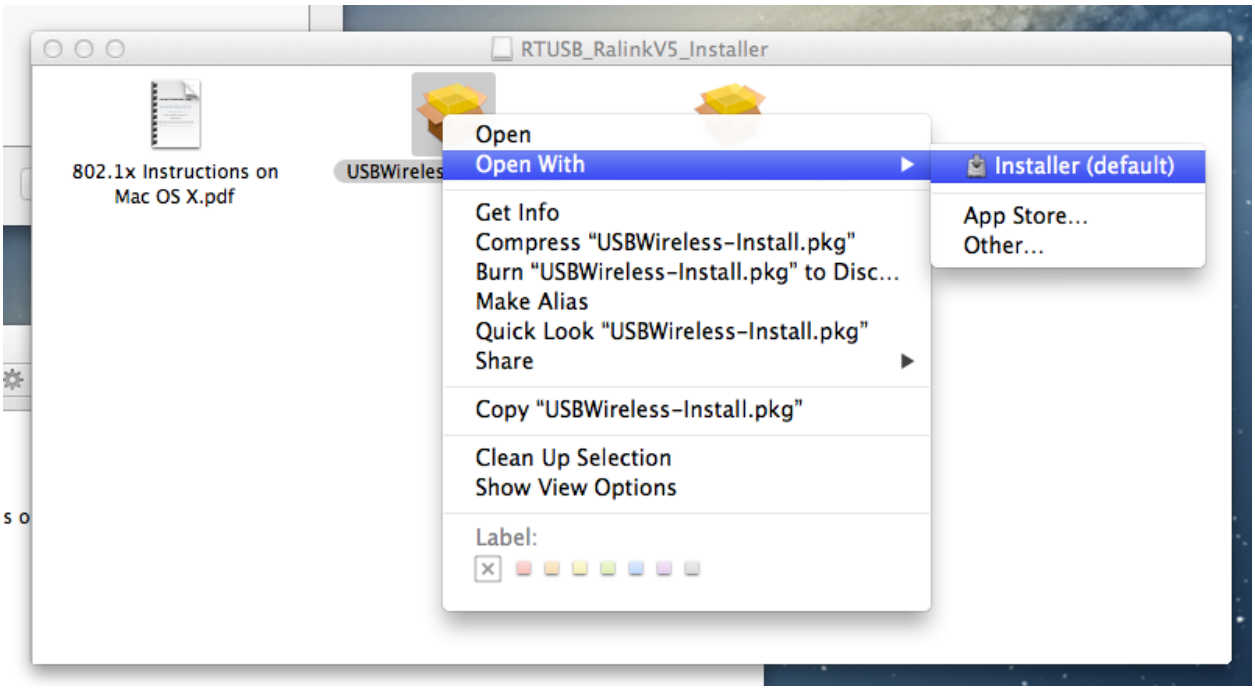
The driver installation is illustrated using a MacBook PRO running the OS X 10.8 Mountain Lion. If you are currently running a previous OS X version, you could still follow the forthcoming steps that might be slight different or upgrade your OX to 10.8 straightaway.

Once you have inserted the DISC into the CD-ROM or downloaded the driver in your computer, open the driver folder that contains the three files shown below.

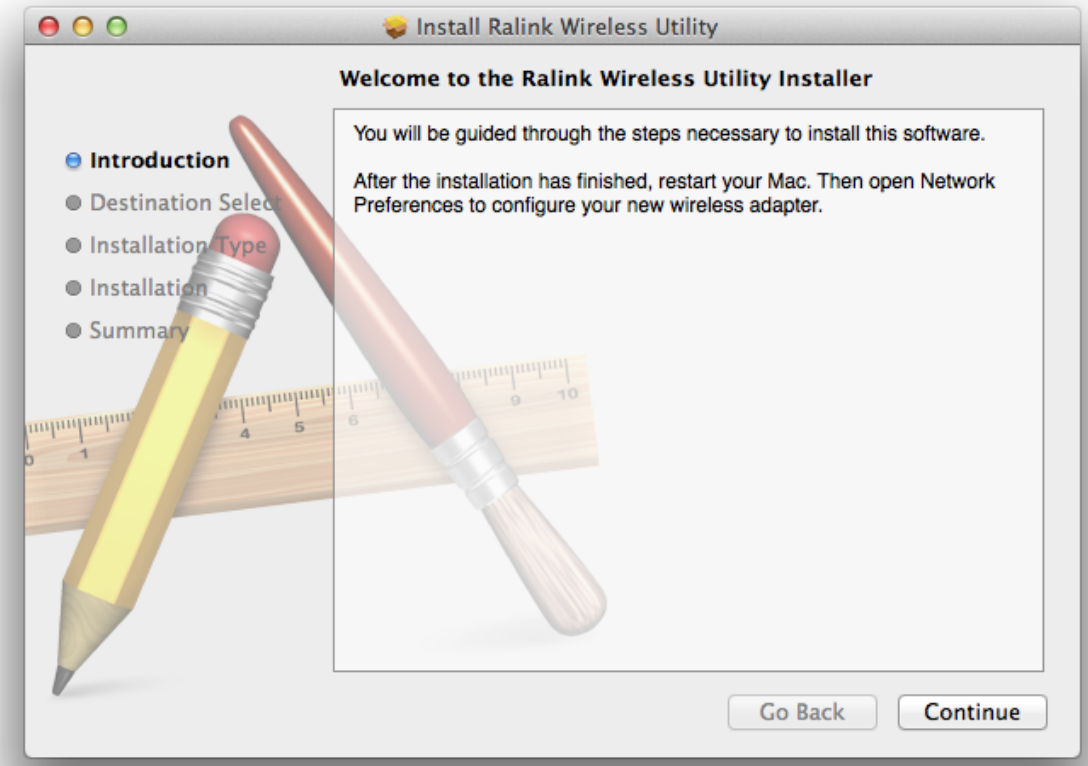


Right-click your mouse on the file “USBWireless-Install.pkg”, then choose “Open With” and click on “Installer (default)”.

© 2015 by danets Datacom Network Ltd. All rights reserved.

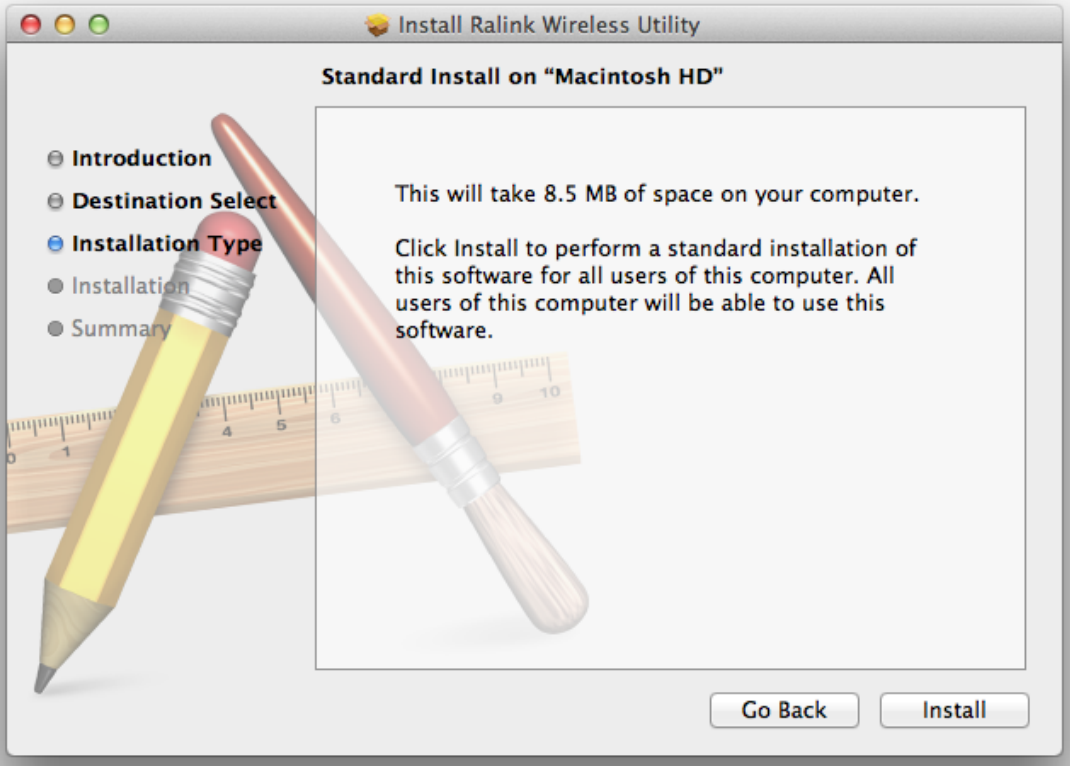


When "Welcome to the Mediatek Wireless Utility Installer" pops up, click on "Continue".

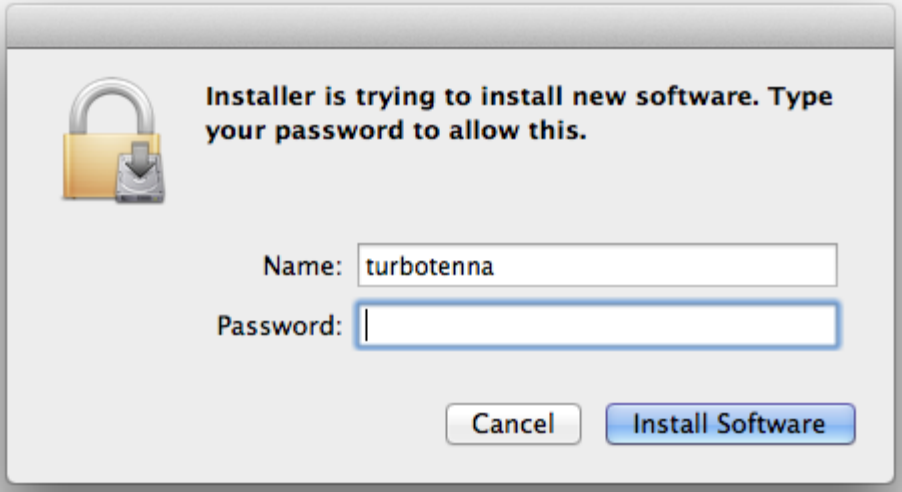

Install Ralink Wireless Utility
Welcome to the Ralink Wireless Utility Installer
Introduction
Destination Select
Installation Type
Installation
Summary
You will be guided through the steps necessary to install this software.
After the installation has finished, restart your Mac. Then open Network Preferences to configure your new wireless adapter.
Go Back
Continue

The next screen indicates that it will take up 8.5 MB of your hard disk space. Click on "Install".

© 2015 by danets Datacom Network Ltd. All rights reserved.

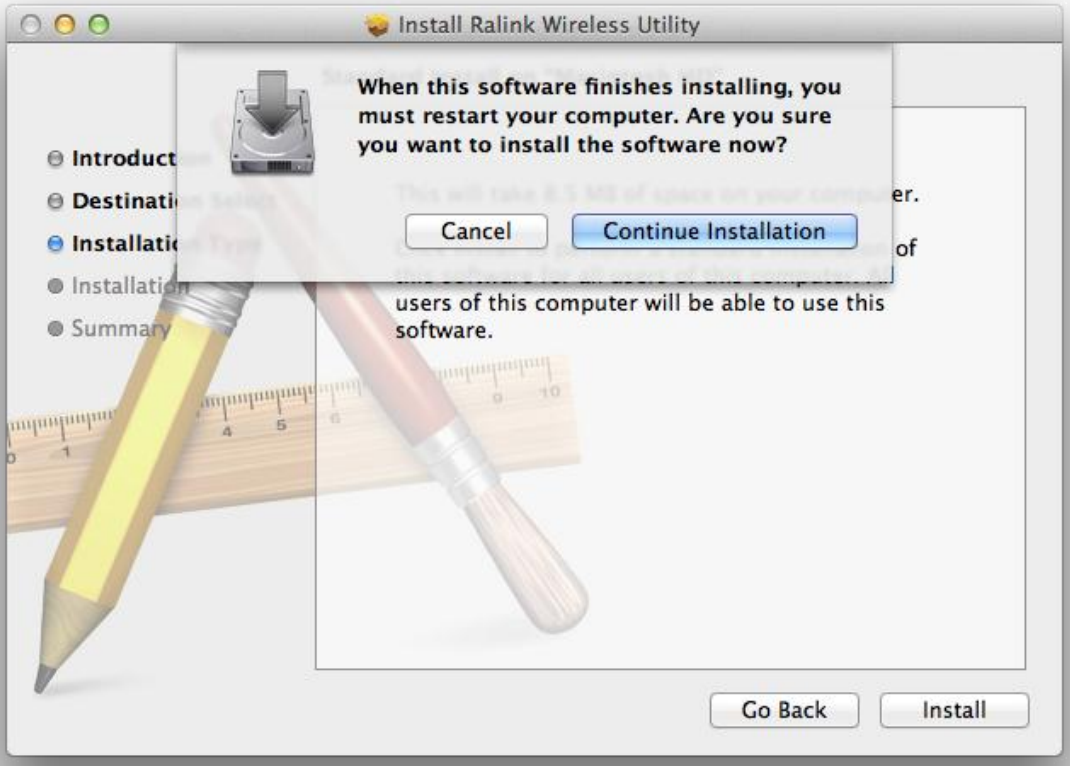

Install Ralink Wireless Utility
Standard Install on "Macintosh HD"
Introduction
Destination Select
Installation Type
Installation
Summary
This will take 8.5 MB of space on your computer.
Click Install to perform a standard installation of this software for all users of this computer. All users of this computer will be able to use this software.
Go Back
Install

Enter your system admin password to "Install Software".

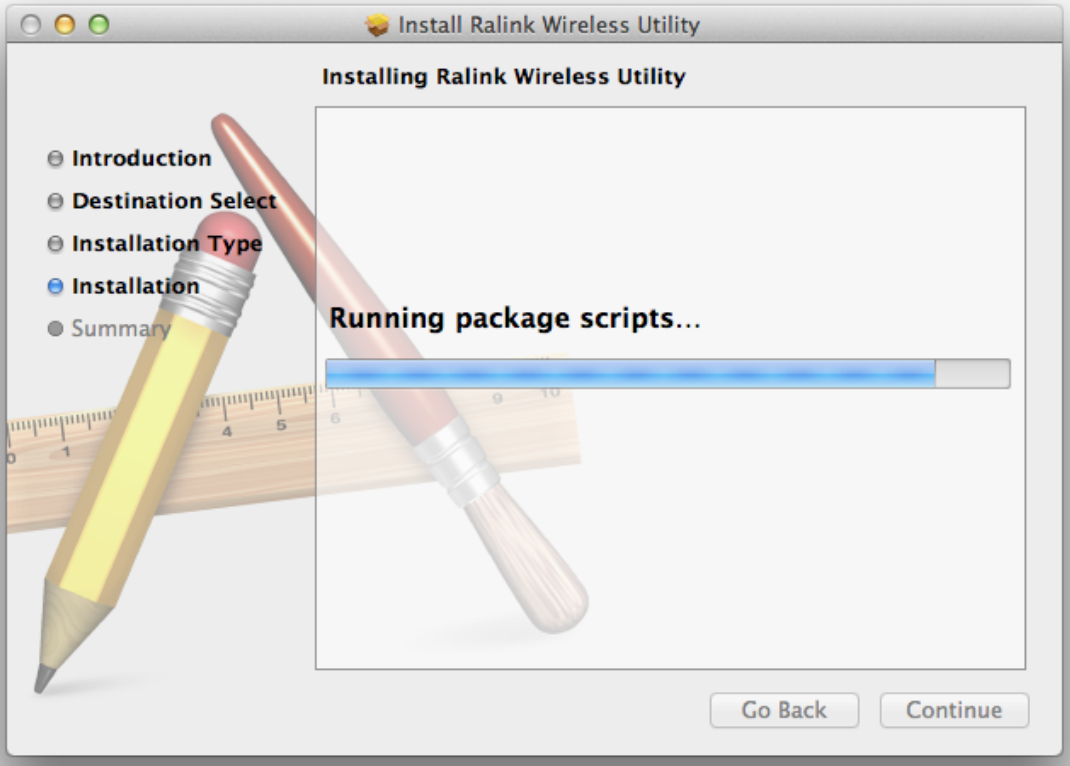


A warning message box pops up indicating that a computer restart is necessary after finishing up the driver installation. Please close all your applications in progress before proceeding to click on "Continue Installation".

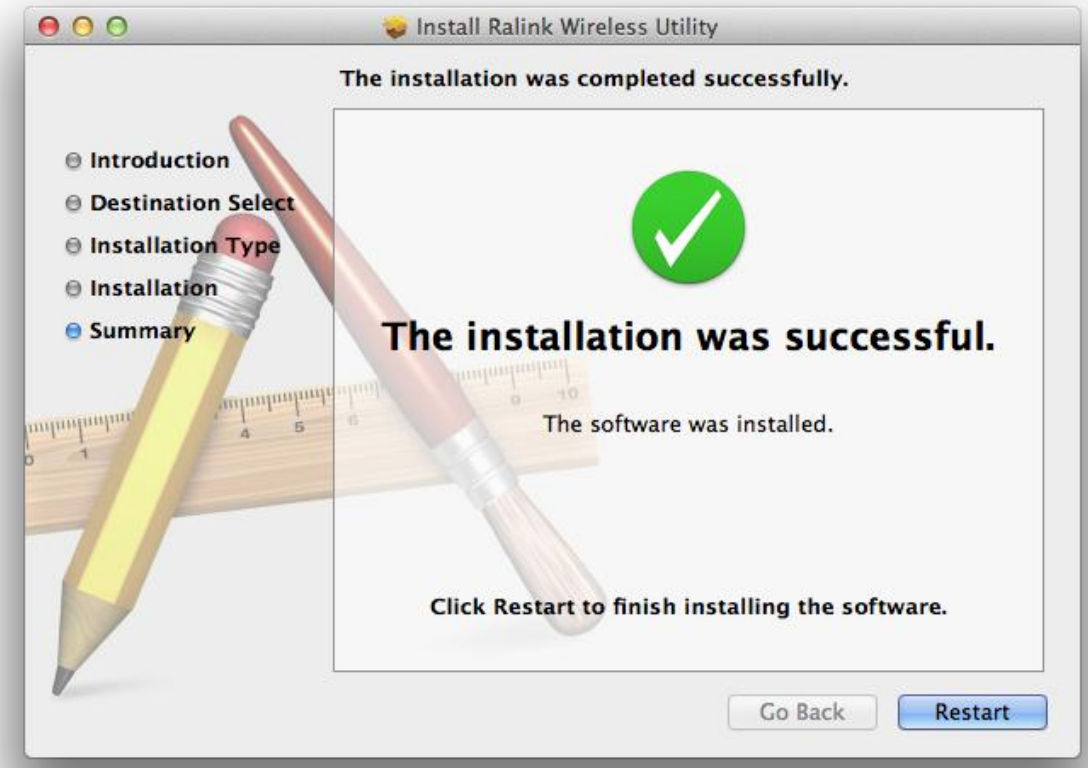
© 2015 by danets Datacom Network Ltd. All rights reserved.



Click on "Install" for running the package scripts.



© 2015 by danets Datacom Network Ltd. All rights reserved.



Click on "Restart" after the installation is successfully finished.

5.3 Running the Wireless Utility

You should be able to locate the "Ralink" (or "Mediatek") icon at the top right hand bar of your computer. Click on it and choose "Open Wireless Utility...".

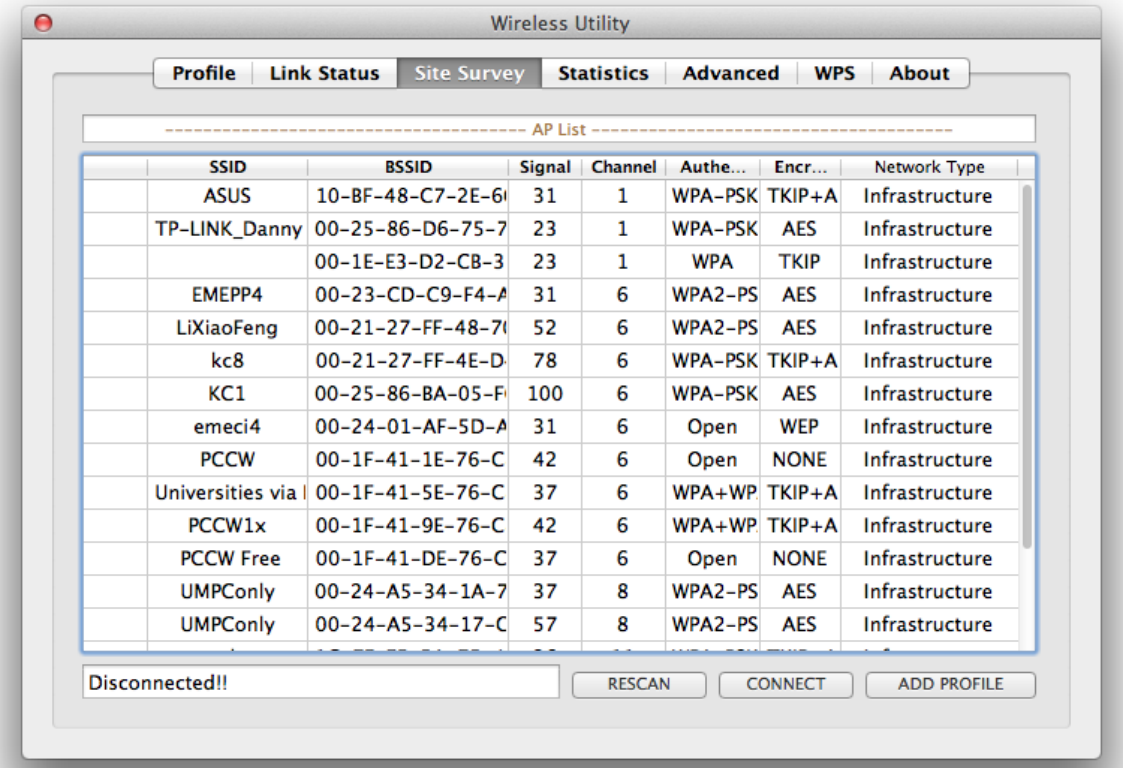
The Ralink (or Mediatek) Wireless Utility consist of several options, namely "Profile", "Link Status", "Site Survey", "Statistics" "Advanced", "WPS", "About".

The most important option is "Site Survey", as it instructs the USB-Yagi TurboTenna to scan and display the wireless networks in your vicinity from which you may choose to connect.

© 2015 by danets Datacom Network Ltd. All rights reserved.

5.4 Site Survey

Click on "Site Survey" on the top bar. It then displays the list of wireless networks after the scan.



SSID = the name of the wireless network picked up by the USB-Yagi TurboTenna.

BSSID = the MAC address of the wireless network. A MAC address is a unique birth mark of a network.

Signal = the signal strength in percentage.

Channel = the channel of the wireless network. If there are many wireless networks sharing the same channel, there is a fair chance of interference and you should choose the one with the strongest signal level. Otherwise change the wireless network to another channel if you are able to do so.

Authentication = either OPEN, or the security protocol that includes the popular WEP, WAP, WAP2 and 802.1x

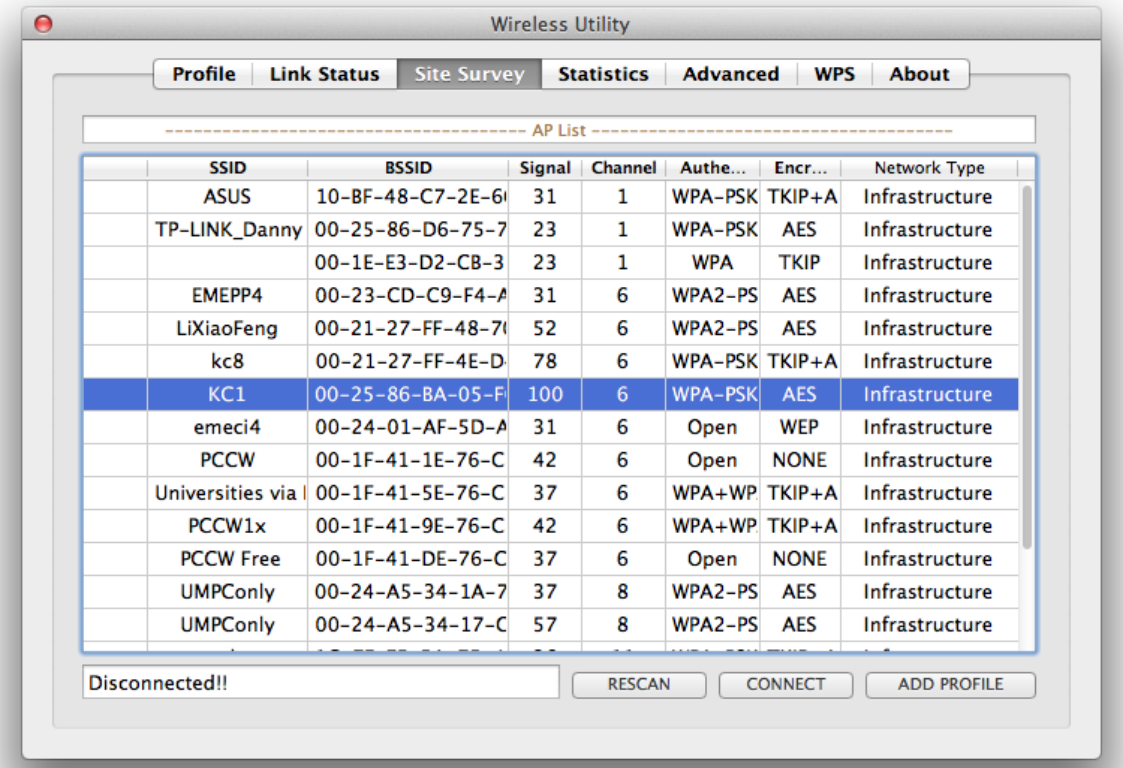
Encryption = NONE, TKIP, AES and TKIP+AES

Network Type = Infrastructure or Ad Hoc. The former is the Access Point mode whereas the latter is peer to peer.

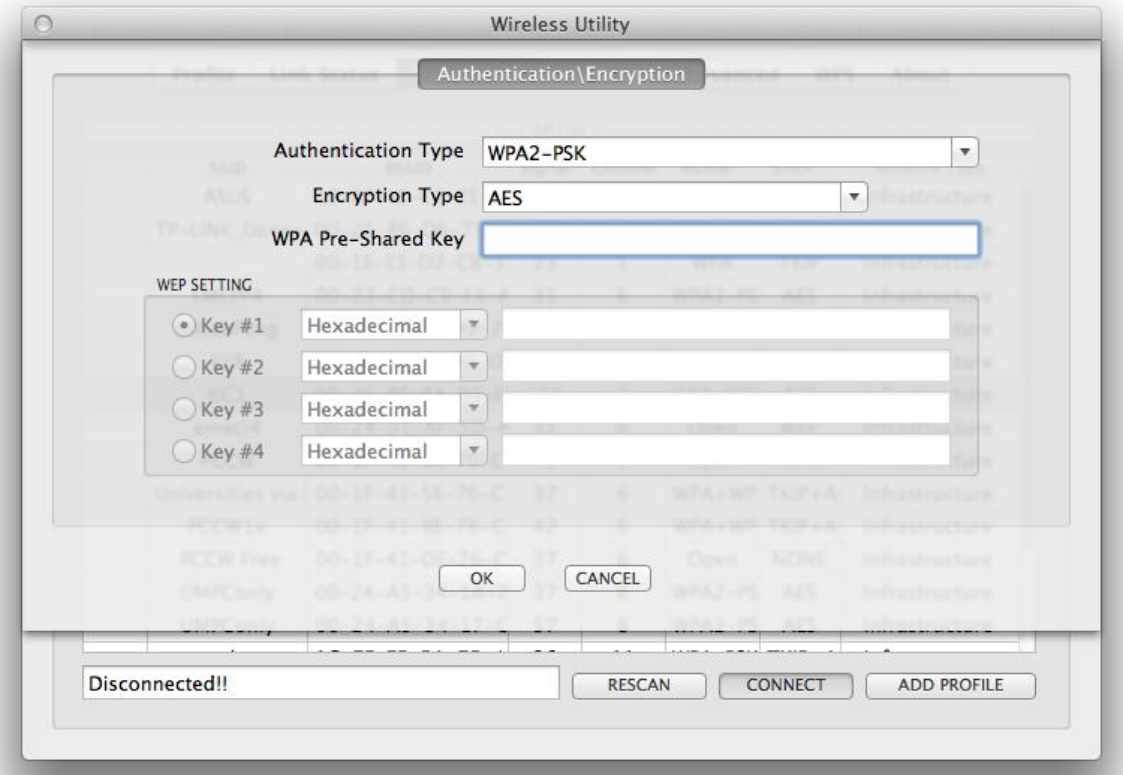
5.4.1 Connecting to a Wireless Network

Suppose that the wireless network we intend to connect in this example is KC1, simply move the mouse over it and click on "CONNECT".

© 2015 by danets Datacom Network Ltd. All rights reserved.

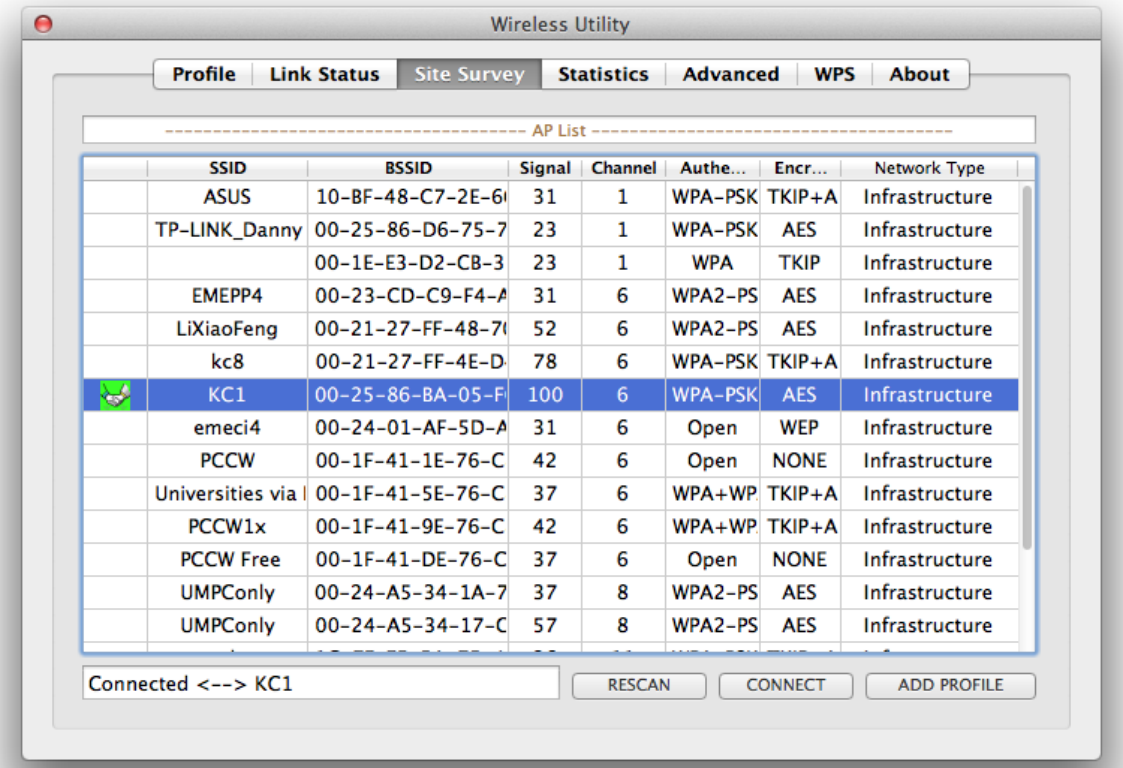


5.4.2 Keying in the Authentication\ Encription Password



© 2015 by danets Datacom Network Ltd. All rights reserved.

If KC1 is not an OPEN wireless network, you have to enter the password in the "WPA Pre-Shared Key" box in order to connect to it. The green handshake icon pops up once the connected is authenticated successully.


Wireless Utility
Profile
Link Status
Site Survey
Statistics
Advanced
WPS
About
AP List
SSID BSSID Signal Channel Authe... Encr... Network Type
ASUS 10-BF-48-C7-2E-6 31 1 WPA-PSK TKIP+A Infrastructure
TP-LINK_Danny 00-25-86-D6-75-7 23 1 WPA-PSK AES Infrastructure
00-1E-E3-D2-CB-3 23 1 WPA TKIP Infrastructure
EMEPP4 00-23-CD-C9-F4-A 31 6 WPA2-PS AES Infrastructure
LiXiaoFeng 00-21-27-FF-48-7 52 6 WPA2-PS AES Infrastructure
kc8 00-21-27-FF-4E-D 78 6 WPA-PSK TKIP+A Infrastructure
KC1 00-25-86-BA-05-F 100 6 WPA-PSK AES Infrastructure
emeci4 00-24-01-AF-5D-A 31 6 Open WEP Infrastructure
PCCW 00-1F-41-1E-76-C 42 6 Open NONE Infrastructure
Universities via I 00-1F-41-5E-76-C 37 6 WPA+WP TKIP+A Infrastructure
PCCW1x 00-1F-41-9E-76-C 42 6 WPA+WP TKIP+A Infrastructure
PCCW Free 00-1F-41-DE-76-C 37 6 Open NONE Infrastructure
UMPConly 00-24-A5-34-1A-7 37 8 WPA2-PS AES Infrastructure
UMPConly 00-24-A5-34-17-C 57 8 WPA2-PS AES Infrastructure
Connected <--> KC1
RESCAN
CONNECT
ADD PROFILE

© 2015 by danets Datacom Network Ltd. All rights reserved.

Appendix I

****

Wi-Fi Protected Setup (WPS) is a standard for easy and secure establishment of a wireless home network, created by the Wi-Fi Alliance and officially launched on January 8, 2007.
The goal of the WPS protocol is to simplify the process of configuring security on wireless networks, and so it was first named 'Wi-Fi Simple Config'. The protocol is meant to allow home users who know little of wireless security and may be intimidated by the available security options to configure Wi-Fi Protected Access, which is supported by all Wi-Fi certified devices.
The standard achieves its goal by putting much emphasis into usability and security, and the concept is implemented through four usage models that enable a user to establish a home network.

So, to add a new device to the Network the user can have up to the following two choices:
PIN Method, in which a PIN (Personal Identification Number) has to be read from either a sticker on the new wireless client device (STA) or a display, if there is one, and entered at the "representant" of the Network, either the wireless access point (AP) or a Registrar of the Network, cf below the Protocol Architecture.
This is the mandatory baseline model, every Wi-Fi Protected Setup certified product must support it.
PBC Method, in which the user simply has to push a button, either an actual or virtual one, on both the AP (or a Registrar of the Network) and the new wireless client device (STA).
Support of this model is mandatory for APs and optional for STAs.
This page addresses the common scenario involving an Infrastructure Network. The support of ad hoc networks (IBSS) are not supported by WPS.

The WPS information contains the authentication type, encryption type, config methods, device password ID, selected registrar, state, version, AP setup locked, UUID-E and RF bands.

Authentication Type - There are three types of authentication modes supported by RaConfig: OPEN, SHARED, WPA-PSK and WPA system.

Encryption Type – For OPEN and SHARED authentication mode, the selection of encryption type are NONE, WEP. For WPA, WPA2, WPA-PSK and WPA2-PSK authentication mode, the encryption type supports both TKIP AND AES.

Config Methods – This corresponds to the methods the AP supports as an Enrollee for adding external Registrars.

Value	**Hardward Interface**
0x0001	USBA (Flash Drive)
0x0002	Ethernet
0x0004	Label
0x0008	Display
0x0010	External NFC Token
0x0020	Integrated NFC Token
0x0040	NFC Interface
0x0080	Push Button
0x0100	Keypad

© 2015 by danets Datacom Network Ltd. All rights reserved.

Device Password ID – This indicates the method or indentifies password that the selected Registrar intends to use. AP in PBC mode must indicate 0x0004 within two minutes.

Value	**Description**
0x0000	Default (PIN)
0x0001	User-specified
0x0002	Rekey
0x0003	Display
0x0004	Push Button (PBC)
0x0005	Registrar-specified
0x0006-0x000F	Reserved

Selected Registrar – This indicates if the user has recently activated a Registrar to add an Enrollee. The values are “TRUE” and “FALSE”.

State – The current configuration state on AP. The values are “Un-configured” and “Configured”.

Version – WPS specified version.

AP Setup Locked – This indicate if the AP has entered a setup locked state.

UUID-E – The universally unique identifier (UUID) element generated by the Enrollee, a 16 bytes value.

RF Bands – This indicates all RF bands available on the AP. A dual-band AP must provide it. The values are “2.4GHz” and “5GHz”.
****

© 2015 by danets Datacom Network Ltd. All rights reserved.

End of Manual.

© 2015 by danets Datacom Network Ltd. All rights reserved.